

**US DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT**



**DOMINGUEZ-ESCALANTE NATIONAL
CONSERVATION AREA**

**ANALYSIS OF THE MANAGEMENT
SITUATION (AMS)**

REPORT

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Abbreviations and Acronyms Commonly Used

ABBREVIATION/ ACRONYM	COMPLETE PHRASE
ACEC	area of critical environmental concern
AMP	allotment management plan
AMS	Analysis of the Management Situation
ATV	all-terrain vehicle
AUM	animal unit month
BLM	Bureau of Land Management
BMPs	best management practices
BSC	Biological soil crust
CCR	Colorado Code of Regulations
CDOW	Colorado Division of Wildlife
CDPHE	Colorado Department of Public Health and the Environment
CFR	Code of Federal Regulations
cfs	Cubic feet per second
CNHP	Colorado Natural Heritage Program
CWQCC	Colorado Water Quality Control Commission
DAU	Data Analysis Unit
D-E NCA	Dominguez-Escalante National Conservation Area
DOE	Department of Energy
DOI	U.S. Department of the Interior
dv	deciview haze index
EA	environmental assessment
EIS	environmental impact statement

EPA	U.S. Environmental Protection Agency
ESA	U.S. Environmental Protection Agency
FAR-Down	Functioning at Risk, Downward Trend
FAR-UP	Functioning at Risk, Upward Trend
°F	degrees Fahrenheit
FLPMA	Federal Land Policy and Management Act
FMP	Fire Management Plan
FMU	Fire Management Unit
FWFMP	Federal Wildland Fire Management Policy
FWS	U.S. Fish and Wildlife Service
GHG	greenhouse gases
GIS	Geographic Information Systems
GJFO	Grand Junction Field Office
IMPROVE	Interagency Monitoring of Protected Visual Environments
LHA	Land Health Assessment
MCNCA	McInnis Canyon National Conservation Area
M&E	Monitoring and Evaluation List
MOU	Memorandum of Understanding
NF	Nonfunctional
OHV	Off-Highway Vehicle
PFC	Proper Functioning Condition
PPSV	Protecting Priority Species and Vegetation
ROW	right-of-way
SRMA	Special Recreation Management Area
TMDL	Total Maximum Daily Load

UFO	Uncompahgre Field Office
U.S.	United States
USBOR	U.S. Bureau of Reclamation
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
VOCs	volatile organic compounds
VRM	visual resource management
WRCC	Western Regional Climatic Center
WSA	Wilderness Study Area
WUI	wildland-urban interface



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Chapter 1: Introduction

The United States (U.S.) Department of the Interior (DOI), Bureau of Land Management (BLM) Uncompahgre Field Office (UFO) and Grand Junction Field Office (GJFO) has initiated the process to develop a resource management plan (RMP) for the Dominguez-Escalante National Conservation Area (D-E NCA) and Dominguez Wilderness Area, which will supersede the two RMPs under which the area is currently managed.

On March 30, 2009, the D-ENCA and the wilderness area, were created by the Omnibus Public Land Management Act of 2009 (Public Law 111-11, “the Act” or “Omnibus Act” hereafter). The D-E NCA RMP will allow the BLM to focus specifically on developing management to conserve, protect and enhance the resources and values of the NCA and the wilderness area as set forth in Section 2402(b) of the Omnibus Act.

Prior to the Dominguez-Escalante NCA and the Dominguez Canyons Wilderness being established, management guidance for these areas was provided by the **Grand Junction** RMP (as amended) and the **Uncompahgre Basin** RMP (as amended). Both plans are currently under revision. The Dominguez-Escalante NCA planning area is excluded from those revisions so that future area management will emerge through this separate planning process.

Grand Junction RMP -- The Grand Junction Resource Area RMP, approved in January 1987, covers approximately 1.28 million acres of public land. Since being approved, the RMP has been amended 12 times and adjusted through plan maintenance 43 times. Amendments relevant to this planning area include:

- Standards for Public Land Health in Colorado
- Allotment management plans
- Grand Valley Habitat Management Plan
- Grand Junction Resource Area Wilderness FEIS and Wilderness Study Report
- Bangs Canyon and North Fruita Desert Recreation Management Plans

Uncompahgre Basin Resource Management Plan -- The Uncompahgre Basin Resource Area RMP, approved in July 1989 covers approximately 1.38 million acres of public lands. Amendments relevant to this planning area include:

- Allotment management plans
- Land use disposal plan (1992)
- Standards for Public Land Health in Colorado

1.1 Purpose of the Analysis of the Management Situation

This analysis of the management situation (AMS) is a summary document that describes the physical and biological characteristics and condition of resources within the planning area, provides a snapshot of how those resources are currently being managed, and identifies observable and measureable trends in resources and resource uses between past and present.

The AMS represents an early component of the planning process, providing a reference for how a given resource might behave in response to issues presented during RMP development, and should not be regarded as a comprehensive or detailed analysis of specific resources. It is intended to provide a framework from which to resolve planning issues through the development of management alternatives.

An Environmental Impact Statement (EIS) will be prepared as part of the RMP. An EIS is a document required by the National Environmental Policy Act for federal government agency actions that "significantly affecting the quality of the human environment." The EIS for this RMP will describe the environmental effects of each alternative land use plan examined by the BLM.

1.2 Description of the Planning Area

The Dominguez-Escalante NCA and the Dominguez Canyon Wilderness (the planning area) consist of approximately 209,610 acres of BLM-administered public lands in Mesa, Montrose, and Delta Counties, Colorado. The southwest border of the planning area is the boundary of the Uncompahgre National Forest. The northwest border of the planning area is Colorado Highway 141 (between the towns of Whitewater and Gateway) and includes approximately 10 miles of the Tabeguache-Unaweeep Scenic and Historic Byway. The northeastern border is US Highway 50. The southeastern boundary is Delta-Nucla (25 Mesa) Road (which runs south to the National Forest boundary) (see Map 1-1).

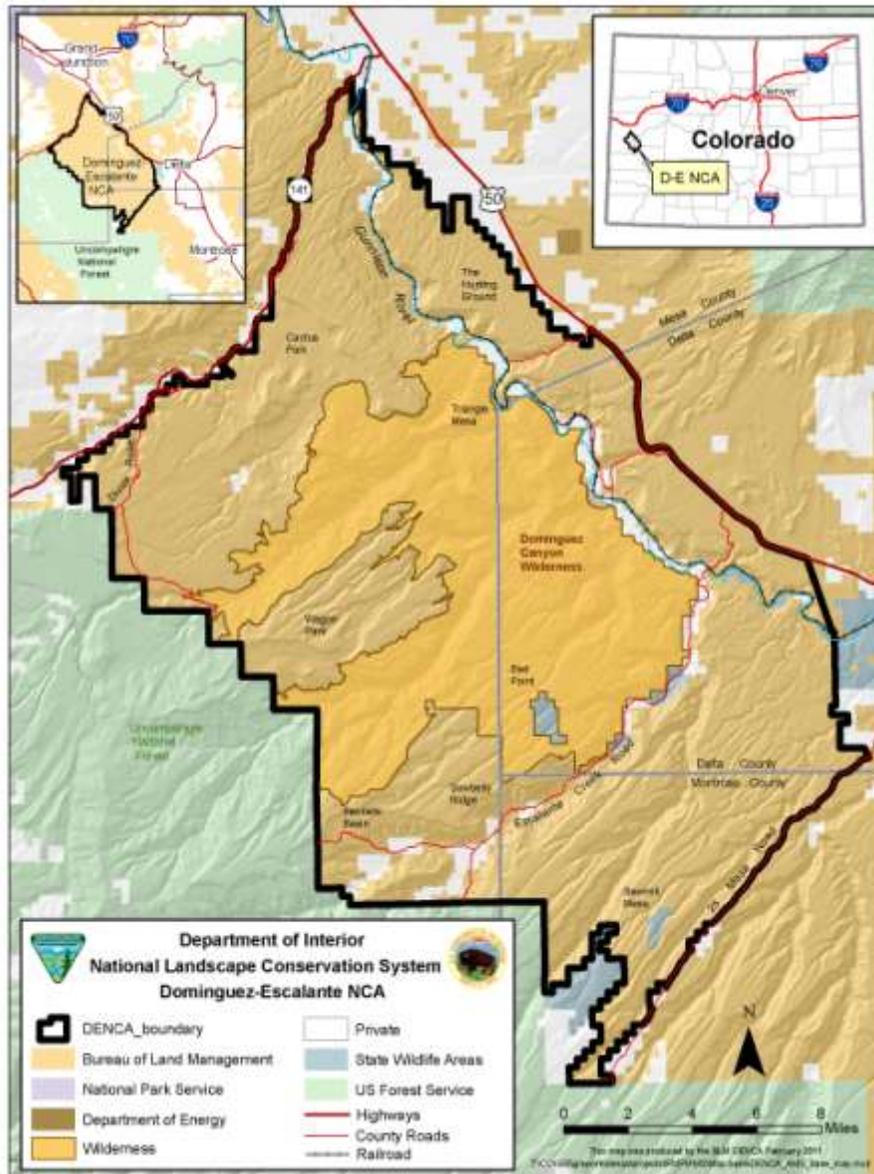
The planning area lies within the Colorado Plateau and Southern Rocky Mountains physiographic provinces. Elevations within the area range from approximately 4,700 feet to over 8,200 feet above sea level, resulting in great biological and topographical diversity. The Colorado Plateau portion is characterized by sedimentary surface deposits dominated by deep canyons. Lower elevation mesas are characterized by predominant rock deposits of sandstone and shale.

The Dominguez Canyon Wilderness is characterized by large mesas dissected by deep red slick-rock canyons and arroyos. The Wilderness consists of an array of ecosystems, ranging from upper Sonoran piñon-juniper desert along the Gunnison River, to Douglas-fir and ponderosa pine, to aspen and spruce-fir forests in the higher areas. The wilderness possesses outstanding geological features, spectacular scenery, ecological diversity, and two cascading mountain streams; and provides valuable wildlife habitat. Species include the collared lizard, desert bighorn sheep, mountain lions, golden eagles and peregrine falcons.

Approximately 35 miles of the Lower Gunnison River runs parallel along the entire northeastern planning area boundary between the towns of Delta and Whitewater. The Gunnison River, which is increasingly popular with both commercial and private boaters, also contains critical habitat for sensitive native fish. Special features of the planning area include proximity to the Old Spanish National Historic

Trail¹ as well as two designated Areas of Critical Environmental Concern (ACECs). The Escalante Canyon ACEC consists of approximately 1,895 acres designated for sensitive plant species, natural seeps, and several globally-unique plant associations (including beautiful hanging gardens of small-flowered columbine and Eastwood’s monkey flower). The Gunnison Gravels/Cactus Park ACEC (5 acres) was designated to protect the scientific and educational values associated with a fluvial gravel deposit that

MAP I.2-1, PROJECT PLANNING AREA



¹ The exact route of the Old Spanish National Historic Trail is still being delineated, but is thought to run near or through the NCA.

suggests the location of an ancestral river in Unaweep Canyon. The NCA also provides for a number of different types of outstanding dispersed recreation opportunities, with important areas such as the Escalante Canyon Potholes area and the Cactus Park area.

The decision area for this planning project includes only the BLM-administered land within the NCA boundary – not the private in-holdings. A map of the planning area is provided in Map 1.2-1, Project Planning area.

1.3 Key Findings

The prior resource management plans (RMP) of the Uncompahgre and Grand Junction field offices, along with subsequent amendments, provided direction for management of BLM-administered lands in the NCA. A big change was the 1997 amendment incorporating the Colorado Standards for Public Land Health and Guidelines for Livestock Grazing Management, which provide a long-term approach for management of land health.

The 2009 Omnibus Public Lands Act that created the D-E NCA heightened expectations for protection, conservation, and enhancement of the following resources: geological, cultural, archaeological, paleontological, natural, scientific, recreational, wilderness, wildlife, riparian, historical, educational, scenic and water. Given this mandate for proactive management for the purposes, there is significant room for improvement in the way in which these resources are managed within the NCA.

Several themes emerged in the course of preparing this AMS report:

1. Relative to other BLM-managed public lands in the Grand Junction and Uncompahgre Field Offices, the natural resources of the D-E NCA are in good condition. The remoteness of much of the NCA from major highways and population centers, the absence of significant surface disturbances, and the rugged nature of the NCA's topography have contributed to the relatively healthy condition of the NCA's natural resources.
2. There has been rapid growth in NCA visitation and recreational activities. Cooperating agency representatives and public comments raise the question of whether NCA resources are being "loved to death." This growth is anticipated to continue in the future, now that the area has been designated as an NCA. Because the Omnibus Act clearly calls for proactive protection of resources, tradeoffs between increased resource protection and increased demand for recreational opportunities are bound to exist.
3. Policy guidance currently provided by the Grand Junction and Uncompahgre Field Office RMPs does not rise to the level of protection and conservation mandated in the Omnibus Act.
4. The status quo in the NCA, whereby the two field offices manage their respective halves of the NCA, has resulted in many inconsistencies. These include inconsistencies in data collection, permit authorizations, management direction and management emphasis. (Both field offices are making steady progress in providing seamless management for D-E NCA.)

1.3a Structure of Report

The following chapters highlight the legislative *purposes* of the Dominguez-Escalante National Conservation Area, while also explaining the resource uses, special designations and the social and

economic issues. One way to think of this report is like a many-layered cake, starting with the **resources** of the D-E NCA, from the geology on up. Add water, vegetation, wildlife and various human concerns, and there's the physical reality of Dominguez-Escalante National Conservation Area.

Chapter 2 addresses:

- *Geology*
- *Paleontology*
- *Water*
- *Natural Resources (soils, vegetation, riparian habitat, aquatic and terrestrial wildlife, fuel and fires)*
- *Cultural Resources (archeology and history)*
- *Wilderness*
- *Lands with Wilderness Characteristics (outside Dominguez Canyon Wilderness and remaining Wilderness Study Area)*
- *Scenic Values*
- *Air resources (air quality, climate and noise) and*

Chapter 3 addresses the **resource uses** of the NCA. First to be covered are those resources that were identified in the NCA's designating legislation. Those uses are:

- *Recreational**
- *Scientific** and
- *Educational**
- Livestock Grazing
- Transportation and Travel Management

The first three* resource uses are also *purposes of the NCA*, as defined by the NCA's designating legislation. While they are not cited as purposes of the NCA, livestock grazing and motorized vehicle use are specifically mentioned in the legislation as permitted uses in the NCA. Motorized recreation is addressed in both the recreation and the transportation and travel management sections.

Resource uses in the NCA that were not identified in the NCA's designating legislation, but that will be discussed in Chapter 3 include:

- Forest and Woodland Products
- Land Tenure and Land Use Authorizations

Chapter 4 will address **special designations**, which are:

- Areas of Critical Environmental Concern
- National Trails and Back-Country Byways
- Wild & Scenic Rivers
- Wilderness Study Areas

Finally, Chapter 5 will address **social and economic concerns**, which are:

- Tribal Interests
- Public Safety
- Social and Economic Conditions

Chapter 2: Resources

This chapter describes the existing condition, current management and future management opportunities regarding the resources within the planning area. Resource uses such as recreation, special designations, and social and economic conditions are discussed in subsequent chapters. This chapter incorporates information compiled at multiple levels to provide a context for the resources and their various uses. The information provided here becomes the basis for the Affected Environment chapter of the Dominguez-Escalante National Conservation Area and Dominguez Canyon Wilderness Resource Management Plan (RMP) and Environmental Impact Statement (EIS). It also forms the basis of the no-action alternative to be analyzed in this plan.

This chapter is arranged with an eye towards the D-E NCA's designating legislation, the 2009 Omnibus Public Lands Management Act. This Act identified 11 resources and 3 resource uses (recreational, scientific and educational resource uses) as purposes for the NCA's designation. The 11 resources identified were:

- Geological
- Paleontological
- Water
- Natural Resources
- Wildlife
- Riparian
- Cultural
- Archeological
- Historical
- Wilderness
- Scenic

Because some of these resources overlap, they were rearranged to minimize repetition. Cultural, archeological and historical resources are discussed in one *cultural resources* section. Natural, wildlife and riparian resources are discussed in one *natural resources* section of this document.

In addition to the resources listed above, additional resources that were not identified as *purposes* of the NCA are discussed in this chapter. These resources are air resources and lands with wilderness characteristics (outside Dominguez Canyon Wilderness and remaining Wilderness Study Area).

2.1 Geological Resources

The geological resources of the D-E NCA were identified in the 2009 Omnibus Act as one of the purposes of the area's designation as an NCA. The beauty of the geology of the D-E NCA's canyons (Escalante, Big and Little Dominguez Canyons, as well as the canyon walls lining the Gunnison River) is a key component of the scenery that draws visitors to the area. The scientific and educational value of the D-E NCA's geological resources also makes these resources exceptional. The 2009 Omnibus Act withdrew the D-E NCA from "location, entry, and patent under the mining laws," which means that the geological resources of the D-E NCA will only be managed for these scenic, scientific and educational values.

Indicators

Geologic resources are defined through descriptions of the surficial and bedrock geology and stratigraphy of the planning area. Geologic information is used to evaluate the potential development of mineral resources, as well as to regulate land uses based upon slope stability and accessibility issues. Several geologic type localities and areas of paleontological significance occur within the planning area.

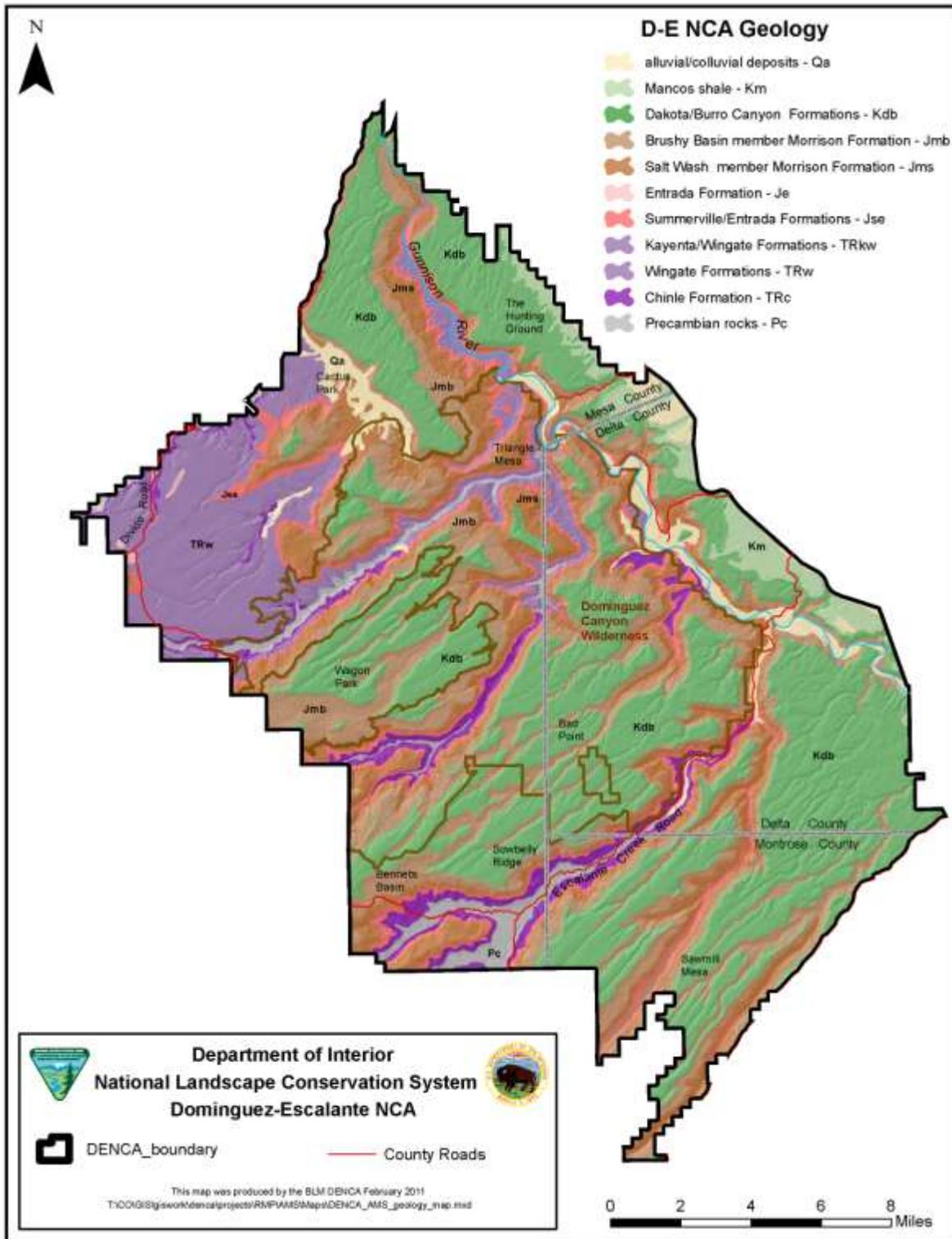
Geological Structure

D-E NCA's resources exist within the context of D-E NCA's geology. The geology is composed of numerous geologic formations from the oldest Precambrian crystalline igneous and metamorphic rocks through the youngest sediments of the Quaternary alluvial deposits. The surface of the northeastern D-E NCA boundary is composed of the Mancos Shale, and older rocks that dominate the surface of the rest of the D-E NCA comprise the northeast flank of the Uncompahgre Plateau (Map 2.1-1). The plateau is about 100 miles long and 25 miles wide trending northwest-to-southeast from the Colorado National Monument to near Ridgeway and the San Juan mountains. High-angle west-to-northwest and northwest trending faults are found mostly along the western margin, but also found within the plateau (Toth et al, 1987). Regional uplift, beginning during the Laramide (70-50 Ma), and continuing in Late Tertiary, and Pleistocene times produced the Uncompahgre Plateau and other topographic features we see today in the region (Toth et al, 1983). The plateau has risen a total of about 6,700 feet in relation to the Book Cliffs in the Grand Junction area (Chronic, 1980).

The geologic rock record includes sediments deposited in the (from youngest to oldest) Quaternary, Cretaceous, Jurassic, and Triassic periods, with an unconforming erosional boundary between the sedimentary Triassic rocks and the intrusive and metamorphic rocks from the Precambrian Era. (*Unconforming means a series of younger strata that do not succeed the underlying older rocks in age or in parallel position, as a result of a long period of erosion or nondeposition.*) Throughout the NCA, the surface often also has various unconsolidated Quaternary deposits, including alluvium and colluvium, older alluvial deposits, and landslides. Small placer gold deposits have been found and exploited in the gravels of the Gunnison River and some of its tributaries.



MAP 2.1-1, D-E NCA GEOLOGICAL FORMATIONS



MAP 2.1.2 D-E NCA ELEVATION

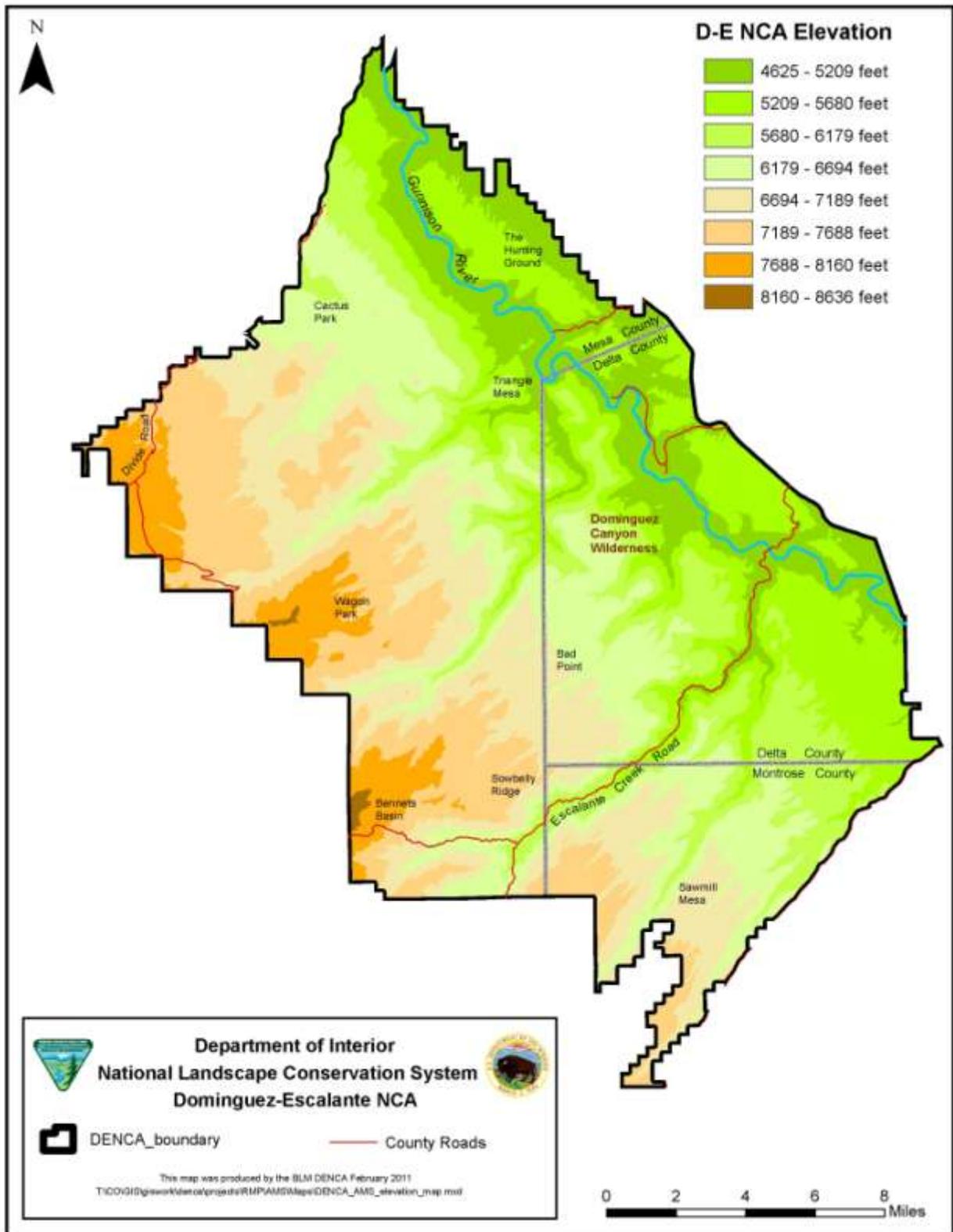
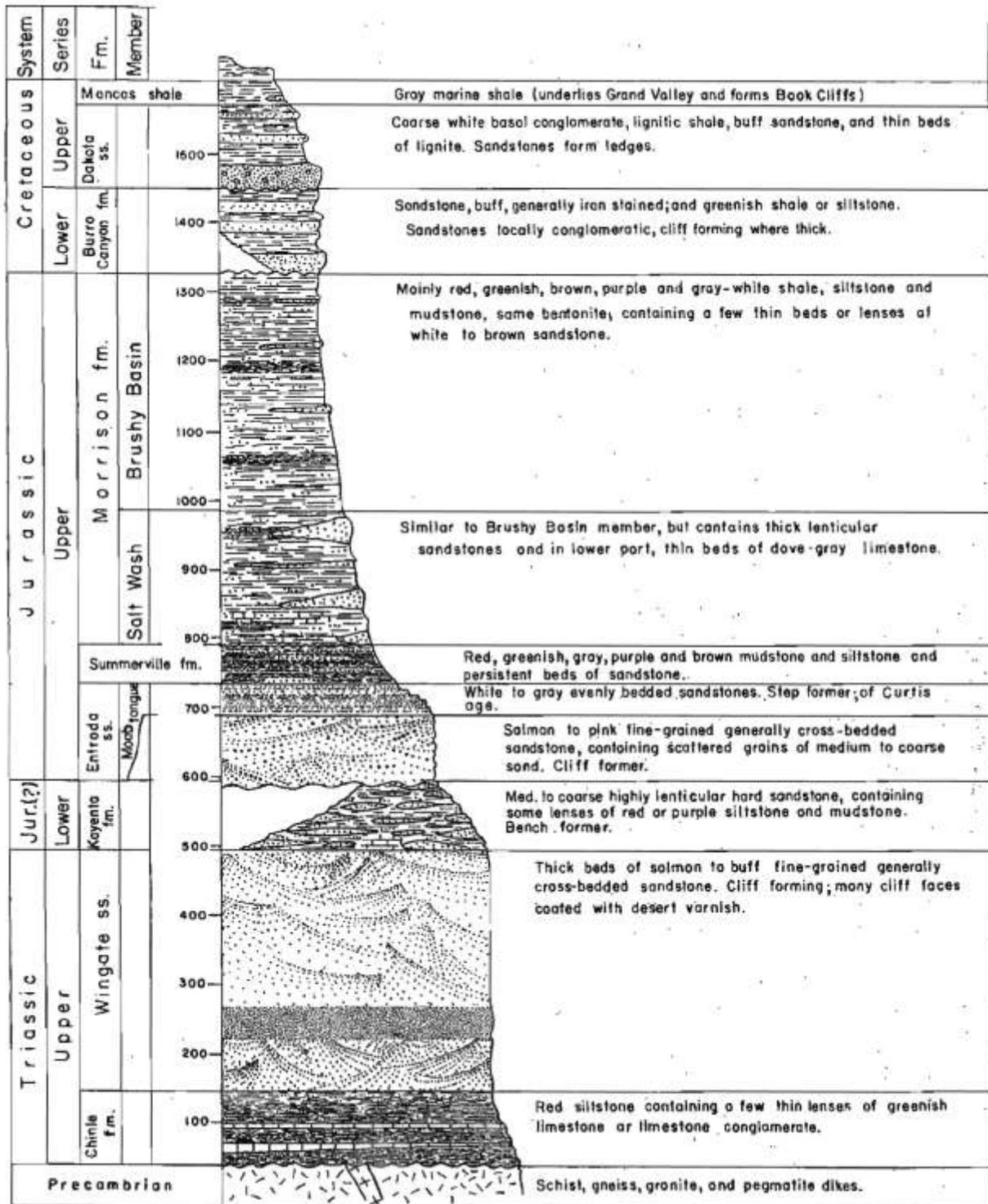


ILLUSTRATION 2.1-1 CUTAWAY OF D-E NCA GEOLOGY



Geologic Formations Defined

The D-E NCA is primarily underlain by flat-lying to monoclinally-folded late Paleozoic to Mesozoic sedimentary rocks. These sedimentary rock formations are, in order from oldest to youngest, the Chinle Formation, Wingate Sandstone, Kayenta Formation, Entrada Formation, Wanakah Formation, Morrison Formation, Burro Canyon Formation, and Dakota Formation. Precambrian rocks exposed in the area lie beneath the sedimentary rock layers and include metamorphic gneisses intruded by mafic and ultramafic rocks, diorites, granites, and pegmatites. Precambrian rocks of approximately 1.7 billion years, intruded by 1.4 billion-year-old igneous rocks, are exposed in the core of the Uncompahgre Plateau (Dickerson et al. 1988; Willis et al. 1996).

Mancos Shale

A thick interval of marine Upper Cretaceous Mancos Shale overlies the Dakota Sandstone; this unit is roughly 3,800 feet thick in Grand Junction area (Lohman 1965). The Mancos Shale consists of gray, thin-bedded, fissile shale that is locally fossiliferous, or interbedded with offshore bar or turbiditic sandstones and sandy siltstones.

Precambrian Rocks

These 1.7 to 1.4 billion year old crystalline rocks make up the core of the Uncompahgre Plateau and lay beneath the red rock formations described below.

Chinle Formation

The 30 to 160-foot-thick Triassic Chinle Formation unconformably overlies the Precambrian crystalline rocks. This erosional contact represents over a billion years of missing geologic history and is often referred to as the "Great Unconformity". It represents over a billion years of erosional history. The depositional regime of the Chinle Formation ranged from fluvial, to floodplain, to lacustrine continental environments that deposited brick-red, interbedded siltstones, sandstones, and shales (Toth et al 1987).

Wingate and Kayenta Formations

The Upper Triassic Wingate sandstone conformably overlies the Chinle Formation and consists of orange-red, massive, fine-grained, well-sorted sandstone that forms steep cliffs from 80 to 100 feet high, found along the Big and Little Dominguez Creeks. Massive crossbeds, vertical joints, and desert varnish are common features of the Wingate and it also forms arches in some places. The Upper Triassic Kayenta Formation conformably overlies the Wingate and is up to 300 feet thick in some places. It consists of discontinuous lenses of purplish-red sandstone interbedded with shale and conglomerate, forming a series of benches and ledges above the Wingate (Toth et al. 1987).

Entrada Formation

The Middle Jurassic Entrada Sandstone is 70 to 120 feet thick in most places and lies unconformably over the Kayenta. It is composed of salmon pink, nonresistant, horizontally bedded siltstone, mudstone, and sandstone. It forms smooth, rounded cliffs with large-scale sweeping crossbeds, indicating an eolian origin (Toth et al. 1987).

Wanakah and Morrison Formations

The Jurassic-age Wanakah unconformably overlies the Entrada Sandstone and consists of thin, evenly bedded mudstone and sandy shale with chert layers and nodular limestone up to 20 to 45 feet thick. Sedimentary beds are predominantly red but can be green, brown, light yellow, or even white. The formation often forms a talus-covered slope (Toth et al. 1987). The Jurassic Morrison Formation unconformably overlies the Wanakah Formation. In some areas erosion places it on the Entrada Sandstone. In this region the Morrison is divided into three members—Tidwell, Salt Wash, and Brushy Basin Members in ascending order. The youngest member of the Morrison Formation is the **Brushy Basin**, which consists of 75 percent variegated, gray, green, lavender, and maroon bentonitic mudstone and 25 percent brown sandstone and conglomerate, which is more predominant in the upper part (Hintze 1988; Doelling 1996). The bentonite is derived from voluminous amounts of volcanic ash that was deposited on a broad floodplain traversed by north and northwesterly flowing paleostreams (Turner-Peterson et al. 1986). Dinosaur bone and petrified wood are locally found at surface exposures of this member. The upper contact of the Brushy Basin is a subtle unconformity. The depositional environment of the Morrison Formation – braided streams, lakes, and deltas – provided what Blakey and Ranney (2008) describe as “one of the world’s great dinosaur graveyards.”

Burro Canyon and Dakota Formations

The Burro Canyon Formation has been recognized as the basal Cretaceous unit above the Morrison Formation in the area to the east of the Colorado River, and this terminology has been used in the Grand Junction, Colorado area (Hintze 1988; Doelling 2001). The Dakota Sandstone unconformably overlies the Burro Canyon Formation, and varies from 0 to 200 feet thick (Hintze 1988; Doelling 1996). The Dakota consists of brown and yellow fluvial sandstone and conglomerate, interbedded green, gray, and black mudstones, and locally some thin coal.

Trends

An increased understanding of area geology can be expected from geologic mapping. Qualitative observation indicates condition has remained stable for geological resources protected or mitigated through the permitting process and other standard operating procedures (e.g., pre-disturbance clearance) associated with federal management actions. In these cases, the trend is toward conservation.

Trend is slightly downward for resources not associated with direct management actions. The primary contributors to this trend are unauthorized collection of fossils, limited law enforcement resources, and ground-disturbance associated with recreational activities.

Forecast

Projected increases in recreational activity may increase the risk of unauthorized collection in areas where geological resources are present – flagstones and decorative rock for private landscaping. Management actions to identify and protect sensitive areas or to mitigate impacts to geological resources would reduce the nature and degree of these impacts.

Current and Future Management

The Omnibus Act withdrew the D-E NCA from “location, entry, and patent under the mining laws” and from the “operation of the mineral leasing, mineral materials, and geothermal leasing laws.” Three minerals claims existed when this Act passed, but have since expired. This means that commercial use of the NCA’s geological resources will not occur without an additional act of Congress.

The 1987 Grand Junction Resource Management Plan set aside a small parcel near Cactus Park as an Area of Critical Environmental Concern (ACEC) for its unique geological resources. This area is described in more detail in section 4.1.

2.2 Paleontology

Indicators

Paleontological resources constitute a fragile and non-renewable scientific record of the history of life on earth. BLM policy is to manage paleontological resources for scientific, educational and recreational values, and protect or mitigate these resources from adverse impacts. To accomplish this goal, paleontological resources must be professionally identified and evaluated, considering paleontological data as early as possible in the decision making process. Paleontological resources are managed according to BLM 8270 Handbook and BLM *Manual for the Management of Paleontological Resources*.

Resource condition is assessed by field observations, paleontological reports, commercial site reports, and project review. The primary resource indicator is whether there is a loss of those characteristics that make the fossil locality or feature important for scientific use. Natural weathering, decay, erosion, improper collection, and vandalism can remove or damage those characteristics that make the paleontological resource scientifically important.

Current Conditions

In the D-E NCA area, fossil-bearing sedimentary rocks range in age from Triassic to Quaternary (245 Ma to present) and include parts of the three great periods of earth history during the Phanerozoic (*phaneros*, meaning visible, *zoic*, meaning life) eon, encompassing the Paleozoic, Mesozoic, and Cenozoic eras. This is a span of geologic time extending about 542 million years from the end of the Proterozoic Eon (which began about 2.5 billion years ago) to the present. Roughly 38.5 percent or 81,801 acres of the planning area’s surface has either Morrison or Chinle Formation on the surface, and these formations have produced many scientifically significant fossils (PFYC Class 4-5).

Numerous paleontological fossil sites have been discovered and continue to be surveyed and recorded. There are currently 3 active quarry sites in the D-E NCA for research purposes, and the public has become increasingly more aware of paleontological resources. In the spring of 2010, one of these quarry sites produced the skull of an ankylosaurid, a rarely found armadillo-like dinosaur, which garnered significant publicity throughout the state of Colorado. Some vertebrate paleontological resource areas within the D-E NCA, like the Cactus Park and Gibbler Mountain areas, have been vandalized.

The geology of the D-E NCA spans a time of roughly 1.7 billion years – not all of the Proterozoic Eon formations are present. Appendix A contains a list of paleontological resources likely to be found in the D-E NCA by geologic rock unit.

Trends

Qualitative observation indicates condition has remained stable for paleontological resources protected or mitigated through the permitting process and other standard operating procedures (e.g., pre-disturbance clearance) associated with federal management actions. In these cases, trend is toward conservation.

Trend is slightly downward for resources not associated with direct management actions. The primary contributors to this trend are unauthorized collection of fossils, limited law enforcement resources, and ground-disturbance associated with recreational activities.

Forecast

Projected increases in recreational use may increase the risk of damage and unauthorized collection in areas where paleontological resources are present. Management actions to identify and protect sensitive areas or to mitigate impacts to paleontological resources would reduce the nature and degree of these impacts.

Current Management

Current management direction is based on RMP management objectives and other paleontology resource management direction, including H-8270-1- Paleontological Resources Management Handbook, H-1601-1-Land Use Planning Handbook, Appendix C, I. Natural, Biological, and Cultural Resources, Part H –Paleontology.

The Dominguez-Escalante NCA objective for paleontological resource management is to manage the paleontological resource program as required by law and policy to protect significant paleontological values. In October 2007, an Instruction Memorandum was issued, implementing a new classification system for protection of paleontological resources in Colorado, called the Potential Fossil Yield Classification or PFYC system. This system rates the potential for geologic units to contain significant fossil resources. Five classes were developed, with Class 1 having very low potential for containing fossils and Class 5 having very high potential. Two geologic formations in the D-E NCA are rated as Class 4-5 and often require paleontology surveys prior to any surface disturbance -- these are the Morrison and Chinle Formations (**Table 2.2-1 and Map 2.2-1**).

TABLE 2.2-1 POTENTIAL FOSSIL YIELD

Table 2.2-1 Potential Fossil Yield Classification Categories	
Condition (from H-8270-1)	PFYC Class (From IM No. 2008-009)
Condition 1 – Areas known to contain vertebrate fossils or noteworthy occurrences of invertebrate or plant fossils. (Note: this refers to known localities or groups of localities)	PFYC Class 4 (High) or Class 5 (Very High), based on geologic unit.
Condition 2 – Areas with exposures of geological units or settings that have high potential to contain vertebrate fossils or noteworthy occurrences of invertebrate or plant fossils.	PFYC Class 3 (Moderate), Class 4 (High), or Class 5 (Very High), based on geologic unit.
Condition 3 – Areas that are very unlikely to produce vertebrate fossils or noteworthy occurrences of invertebrate or plant fossils.	PFYC Class 1 (Very Low) or Class

Source: IM No. 2008-009 and Handbook H-8270-1; PFYC-potential fossil yield classification

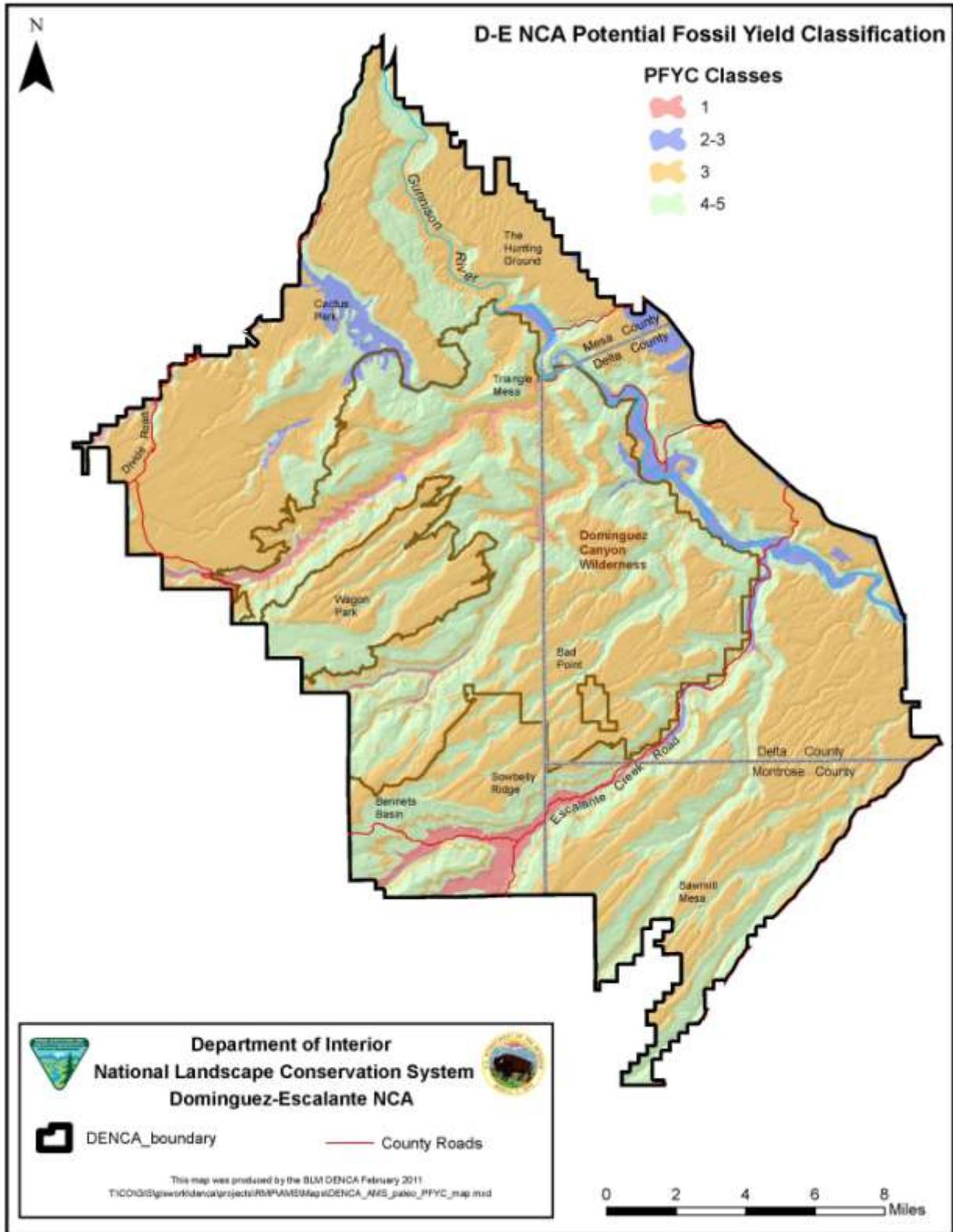
Management Objectives

Existing management inadequately addresses the study, use, and protection of paleontological resources. This planning effort will need to address the management of paleontological resources, including their scientific, educational, recreational and consumptive use values. This could be accomplished through programmatic decisions providing direction to the paleontology program, as well as land use stipulations or restrictions to protect these values.

Potential Management Actions

- Develop and maintain a Paleontological Resource database similar in scope to the Cultural Resource database. Develop a PFYC coverage map for the DE-NCA based on known geological surface indicators.
- Inventory projects for paleontological resources in areas of high paleontological values, using the PFYC classification of lands as a planning tool, before project approval. Take measures to protect any significant paleontological resources found.
- Promote a program of research based inventory on the DE-NCA, beginning with lands in the PFYC class five category.
- Implement protection and preservation measures when deteriorating conditions are found.

MAP 2.2-1 POTENTIAL FOSSIL YIELD



2.3 Water

The water resources of the D-E NCA were specifically cited as a purpose of the Dominguez-Escalante area's designation as an NCA in 2009. These water resources support aquatic, riparian and terrestrial species throughout the NCA. The undeveloped nature and the quality of many of the water courses distinguish the D-E NCA from other areas in Western Colorado. (See Map 2.3-1, D-E NCA Hydrology)

Resource Description

The Gunnison River, 33 miles of which flow through the D-E NCA planning area, constitutes the fifth largest tributary to the Colorado River and is the only river within the D-E NCA. Dominguez Creek forms below the confluence of the perennial Big and Little Dominguez Creeks. This watershed drains approximately 24 percent of the NCA's land area and includes Rose Creek, a perennial stream that flows into Little Dominguez Creek. Escalante Creek drains approximately 21 percent of the land area of the NCA. Its tributaries include the perennial Dry Fork, Kelso Creek and North Fork. The only other perennial stream in the NCA (besides a short section of Kannah Creek in the northeastern part of the NCA), Cottonwood Creek, is part of the Roubideau Creek watershed. Roubideau Creek flows into the Gunnison River upstream of the NCA and drains approximately 8 percent of the NCA's land area.

The remaining land area of the NCA (approximately 53 percent of the NCA) is drained by intermittent and ephemeral streams. The intermittent Gibbler Gulch and Farmers Canyon drain the northwestern portion of the NCA into East Creek, a perennial tributary to the Gunnison River. On the east side of the Gunnison River, portions of the ephemeral Indian Creek, Deer Creek, Wells Gulch and Alkali Creek fall within the Hunting Ground area and drain directly into the Gunnison River. Kelso Gulch and Palmer Gulch are also intermittent drainages that flow into the Gunnison River.

Many springs and seeps have been identified so far in the NCA, many of which provide essential habitat features for rare plants and plant communities, and wildlife. More will be inventoried as BLM staff survey rugged areas of the NCA. Many of these seeps and springs have been developed for livestock grazing by BLM permittees.

MAP 2.3-1, D-E NCA HYDROLOGY

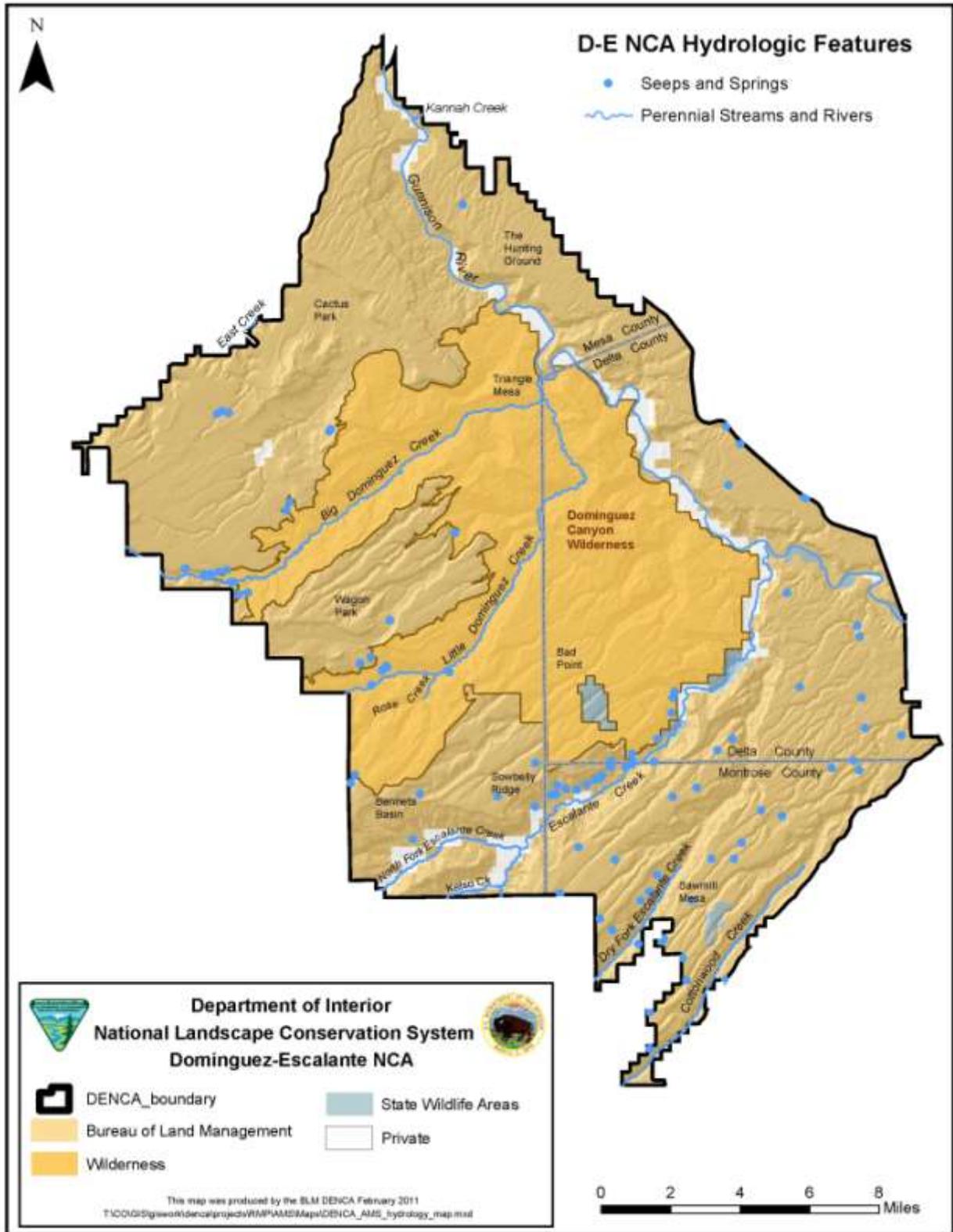


TABLE 2.3-1 PERENNIAL STREAMS

Name	Miles
Big Dominguez Creek	15.9
Little Dominguez Creek	15.6
Dominguez Creek	0.72
Escalante Creek	16.9
Cottonwood Creek	9.9
Dry Fork Escalante Creek	5.0
North Fork Escalante Creek	6.0
Rose Creek	0.9
Kelso Creek	2.2

Indicators and Current Condition

State Water Quality Standards

A full suite of water quality standards have been developed by the Colorado Water Quality Control Commission to protect the designated uses of streams in the state. Those stream segments not

achieving standards for one or more pollutants are placed on the 303(d) list of impaired waters. If some impairment is suspected, but data are inconclusive or inadequate, the segment is placed on the Monitoring and Evaluation (M&E) list.

Standards for water quality are based on the classification or designated use of particular streams. The classifications or designations for stream resource use are defined as follows:

Aquatic life cold 1: Waters currently or potentially capable of sustaining a wide variety of cold water biota, including sensitive species.

Aquatic life warm 1: Waters currently or potentially capable of sustaining a wide variety of warm water biota, including sensitive species.

Aquatic life warm 2: Waters not capable of sustaining a wide variety of warm water biota, including sensitive species, due to physical habitat, water flows or levels, or uncorrectable water quality conditions that result in substantial impairment of the abundance and diversity of species.

Recreation E: “existing primary contact” designation for waters in which primary contact uses have been documented or are presumed to be present. This is the default designation if no other information is available. These surface waters are suitable or intended to become suitable for recreational activities in or on the water when the ingestion of small quantities of water is likely to occur. Such waters include but are not limited to those used for swimming, rafting, kayaking and water-skiing.

Recreation N: Waters are not suitable or intended to become suitable for primary contact recreation uses. This classification shall be applied only where a use attainability analysis demonstrates that there is not a reasonable likelihood that primary contact uses will occur in the water segment(s) in question in the next 20-year period.

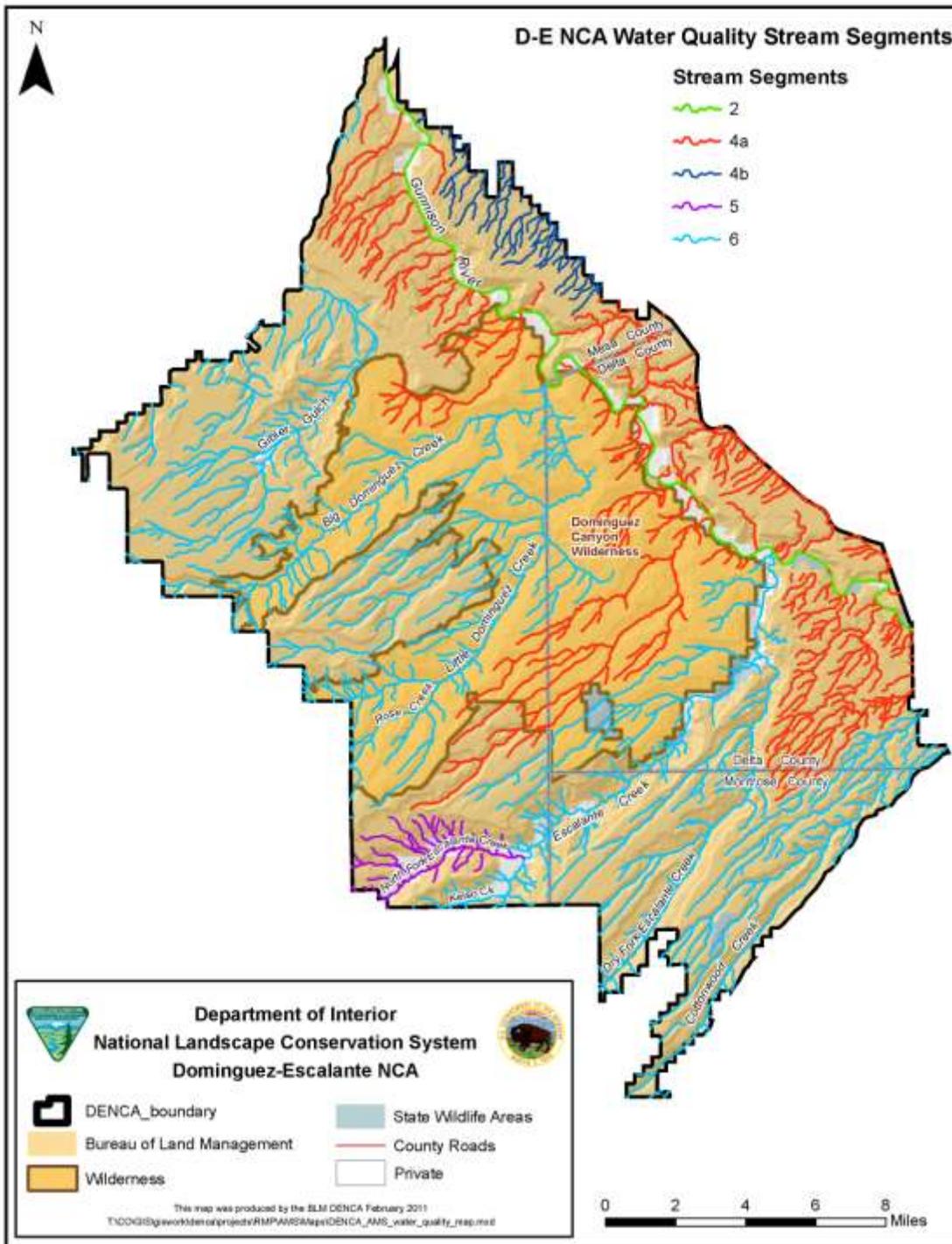
Water supply: Waters are or could become suitable for potable water supplies.

Agriculture: Waters are or could become suitable for crop irrigation and livestock watering.

Stream Segments within the D-E NCA (also see Map 2.3-2 and Table 2.3-2)

Little Dominguez Creek, Big Dominguez Creek, Rose Creek, Escalante Creek, and East Creek (including tributaries) are all situated in the lower Gunnison River basin, *Stream Segment 6*, which is designated for aquatic life cold 1, recreation E, and agriculture. These creeks represent the vast majority of the perennial stream miles in the planning area (519 stream miles of 923 total stream miles). Stream segment 6 is currently meeting state water quality standards.

MAP 2.3-2, D-E NCA WATER QUALITY



Stream Segment 4a of the lower Gunnison River basin represents the second most common water quality stream segment within the planning area (301 miles). This segment is classified for Aquatic Life Warm 2, Recreation N, Water Supply, and Agriculture. This stream segment primarily represents ephemeral tributaries flowing south to the Gunnison River. Stream segment 4a is water quality impaired for selenium.

Stream segment 4b of the Lower Gunnison River is also within the planning area. Specifically tributaries to Kannah Creek that flow from the Hunting Grounds fall within stream segment 4b. Approximately 40 stream miles within the planning area are within stream segment 4b. Use classifications for this segment include aquatic life warm 2, recreation N, water supply and agriculture. Stream segment 4b currently meets water quality standards set by the State.

The North Fork of Escalante Creek and its associated tributaries are situated within water quality **stream segment 5** of the Lower Gunnison River Basin. Approximately 30 stream miles within the planning area are within stream segment 5. Use classifications for this segment include aquatic life cold 1, Recreation E, Water Supply, and Agriculture. Stream segment 5 is currently meeting State water quality standards.

The main stem of the Gunnison River through the assessment area is part of the lower Gunnison River Basin, **Stream Segment 2**, which is protected for Aquatic Life Warm 1, Recreation E, Water Supply, and Agriculture. Stream segment 2 is impaired for selenium and is identified on the M&E list for potential sediment impairments.

Both Stream Segments 4a (other tributaries to the Gunnison) and 2 (mainstem of the Gunnison) are on the 303(d) list for selenium. A total maximum daily load (TMDL) is currently being developed for the Gunnison River watershed to address selenium loading. *The portions of the two segments within the Dominguez LHA area are not likely to be contributing to the selenium impairment.*

TABLE 2.3-2 WATER QUALITY FINDINGS

Entire DENCA		
<i>Water Quality Stream Segment</i>	<i>Miles</i>	<i>Finding on Standard 5</i>
Lower Gunnison-2	33	Not Meeting
Lower Gunnison-4a	301	Not Meeting
Lower Gunnison-4b	40	Meeting
Lower Gunnison-5	30	Meeting
Lower Gunnison-6	519	Meeting
<i>Total Stream Miles</i>	923	
<i>Total Stream Miles Meeting Standard 5</i>	589	
<i>Total Stream Miles NOT Meeting Standard 5</i>	334	

Selenium is derived from the marine shale geology, namely Mancos Shale, in the watershed. Deep percolation of irrigation water from unlined canals, laterals, ponds, and fields on Mancos Shale mobilizes selenium and is the primary cause of selenium impairment in the lower Gunnison River Valley. BLM management of public lands within the assessment area is likely not a primary causal factor for selenium impairment, because irrigation typically does not occur on public lands. However, any surface-disturbing activity has the potential to incrementally increase selenium loading in streams because selenium can be

transported by sediment, if it is not already leached out. BLM requirements for Best Management Practices on surface-disturbing projects help minimize sediment erosion and transport. .

BLM and USGS Water Quality Data

The BLM and the US Geological Survey (USGS) also collect water quality data. This data is more site-specific than the state's data, which generalizes across the classes of tributaries described above. Bi-annual water quality data was collected by BLM from 1982-1994, 2009 in Lower Dominguez and 1993-1995, 2007, and 2009 in Upper Big Dominguez. Flow data and field water quality parameters continue to be collected by BLM in upper and lower Big/Little Dominguez Creeks.

BLM data indicate Little and Big Dominguez Creeks have excellent water quality. Total dissolved solids are generally below 250 mg/l and the waters are a calcium-bicarbonate type. These streams tend to naturally convey large sediment loads from storm flows. The 303(d) and M&E lists do not include these streams, which are in Stream Segment 6, suggesting water quality standards are being met.

Springs

The BLM conducted a spring inventory within the planning area starting in 2007 (completed in 2010). Springs were inventoried and water rights were filed. In the most rugged sections of D-E NCA, more springs and seeps may be discovered.

Water Flows

In anticipation of its application for in-stream flow rights in the NCA, the BLM collected water flow data throughout the NCA. This data helped to identify flow rates needed for fish species, plant species, riparian communities, and aquatic insect communities in these streams.

As part of this effort, BLM installed four pressure transducers (two in Big and two in Little Dominguez Creeks) starting in 2008. Currently, three of these sites are still functional (the upper Big Dominguez Creek site was vandalized in 2010). BLM will continue operation of the functional sites.

In addition, water flows were measured on Escalante, North Fork Escalante and Cottonwood Creeks in anticipation of the BLM's applications for in-stream flow rights. Permanent pressure transducers were not established on these streams.

Table 2.3-3 displays the results of the BLM's water flow data for Big and Little Dominguez Creeks. Flows vary greatly throughout the year, with high flows occurring from snowmelt in late spring, and base flows in late summer through winter. Peak flows tend to occur from summer convective storms and are localized and very flashy. The area also includes numerous unnamed ephemeral streams that are tributary to the Gunnison River which flow only in response to precipitation events and usually do not support riparian communities.

TABLE 2.3-3 WATER FLOW DATA, BIG/LITTLE DOMINGUEZ CREEKS

Flows	Big Dominguez Creek	Little Dominguez Creek
Base Flows (typically July through February)	1.53 to 3.86 cfs	1.20 to 2.15 cfs
Snow Melt Runoff Flows (typically March through June)	75 cfs	65 cfs
Annual Flood Flows (typically short-term thunderstorm events July through Sept.)	250 cfs	200 cfs
Less Frequent Large Flood Events (thunderstorm driven events recurring on 3 to 10-year interval)	725 cfs	500 cfs

In recognition of the naturally high variability of flows in Big and Little Dominguez Creeks, in-stream flow rights were established on these creeks in order to mirror this natural variability. The result is that the volume of water protected by the instream flow water right will vary substantially in response to natural variations in hydrologic conditions. This should ensure that the natural flow patterns of these creeks, which are still uniquely un-impacted by developments upstream, remain intact for years to come.

Trends

Due to the remote location of much of the perennial water in the planning area, water quality data indicates stable conditions. Much of the landscape has been “self managing” thanks to lack of trails, topographical barriers and minimal publicity.

Forecast

Development of new trails and increased visitation to the planning area (specifically adjacent to perennial streams/springs) could threaten proper function and condition within the watershed. Sufficient stream channel morphology, riparian habitats, and upland watershed stabilization are essential to preserving water quality. Increased visitation represents the potential to compromise watershed health if not properly managed. Enforcement of rules and regulations will be critical, as will maintenance of all recreational facilities (roads, trails, campgrounds, parking areas, etc).

Current Management Direction

The BLM manages water resources to meet Public Land Health standard 5, which is consistent with meeting State water quality standards. The following references (and subsequent updates) are utilized for consistency.

CDPHE–WQCC. 2010a. Regulation No. 35 “Classifications and Numeric Standards for Gunnison and Lower Dolores River Basin (5 CCR 1002-35)”. Colorado Department of Public Health and Environment-Water Quality Control Commission. Amended: February 8, 2010 Effective June 30, 2010.

CDPHE-WQCC. 2010c. Regulation No. 93, “Colorado’s 303 (d) List of Impaired Waters and Monitoring and Evaluation List, (5 CCR 1002-93)” effective April 30, 2010.

CDPHE-WQCC. 2010d. "Integrated Water Quality Monitoring and Assessment Report-State of Colorado" The Update to the 2008 305(b) Report," Colorado Department of Public Health and Environment -Water Quality Control Commission, Effective April 30, 2010.

Water rights

Springs

The planning area contains numerous springs, most of which are developed for wildlife and livestock use and have BLM water rights to protect water quantity. Springs, seeps, and wetlands are sensitive areas high in plant and animal diversity, relative to surrounding areas. Livestock and recreational activities can adversely impact these sensitive areas.

In-stream Flow Rights

The Bureau of Land Management has a working partnership with the Colorado Water Conservation Board, the entity that recently established in-stream flow water rights to support water-dependent values within the wilderness area. Under a MOU between BLM and the CWCB, the agencies cooperated to gather data and worked closely with stakeholders within the Big and Little Dominguez Creek watersheds to gain support for instream flow protection. The two agencies then worked together on formulation of an instream flow application and an accompanying enforcement agreement.

The Omnibus Act provides an opportunity for the Colorado Water Conservation Board (CWCB) to appropriate an instream flow water right to support the purposes of the area as described in the legislation:

"The purposes ... are to conserve and protect for the benefit and enjoyment of present and future generations ... the water resources of area streams, based on seasonally available flows that, are necessary to support aquatic, riparian, and terrestrial species and communities."

Source: (Section 2402 (b))

To fulfill these broad purposes, an atypical instream flow appropriation for Big Dominguez Creek and Little Dominguez Creek that does not contain specific flow rates and timing was adopted. Initially, the CWCB developed a quantified estimate of future non-federal water use for the private properties on the top of the Uncompahgre Plateau that are in and immediately adjacent to these two watersheds. The estimate was designed to allow land owners to maintain existing land uses and viable agricultural practices, and considered relevant factors including elevation, climate, soils, water availability, and historic water use practices. This "development allowance" was restricted to a maximum annual volume that will allow natural hydrologic variability in these stream systems to continue.

To protect the natural environment to a reasonable degree, the CWCB then appropriated for the BLM all of the flow that is annually available in each creek after the "development allowance" is satisfied. The variability in flows should protect base flows, snow melt runoff flows, annual flood flows from thunderstorm events, and less frequent large flood events.

The result is that the volume of water protected by the instream flow water right will vary substantially in response to natural variations in hydrologic conditions. In addition, a maximum annual volume of water will be available for diversion by property owners within the two watersheds, and this modest volume of water will be considered senior to the instream flow water right. The actual volume of water

that is available each year for future uses will be subject to local water availability where the diversions are located and will be subject to priority administration.

Table 2.3-4 displays the in-stream water rights that the BLM holds in the NCA.

TABLE 2.3-4 INSTREAM WATER RIGHTS HELD BY STATE OF COLORADO

Stream Name	Upper Terminus	Lower Terminus	Flow Rates	Priority Date
Big Dominguez Creek	Wilderness Boundary	Wilderness Boundary	Entire flow of creek minus future development allowance	2010
Little Dominguez Creek	Wilderness Boundary	Wilderness Boundary	Entire flow of creek minus future development allowance	2010
Rose Creek	Entire flow is claimed by Little Dominguez Creek instream flow water right	Confluence w/ Little Dominguez	Unavailable	2010
Escalante Creek	Confluence with North Fork Escalante Creek	Headgate of Captain H.A. Smith Ditch	4.0 cfs (3/1 to 3/31) 8.2 cfs (4/1 to 6/14) 4.0 cfs (6/15 to 7/31) 1.5 cfs (8/1 to 2/28)	2005
Escalante Creek	Confluence of East Fork and Middle Fork Escalante Creek	Headgate of Knob Hill Ditch	3.2 cfs (March 1 to March 31); 11.5 cfs (April 1 to June 14); 4.0 CFS (June 15 to July 31); 1.3 cfs (August 1 to February 28)	2005
Cottonwood Creek	Headgate of Hawkins Ditch	Confluence with Roubideau Creek	3.6 cfs (4/1 to 6/15)	2006
North Fork Escalante Creek	Confluence with Points Creek	Headgate of Sawtell Ditch	3.7 cfs (4/1 to 6/14) 0.6 cfs (6/15 to 3/31)	2006

Adequacy of Current Management Direction

Public Land Health Standard 5 states that the water quality of all water bodies located on or influenced by BLM lands will meet or exceed Colorado Water Quality Standards. This can be difficult to achieve because stream segments can include large areas with mixed private and public land ownership, making cohesive management challenging. Currently, Segments 4b, 5, and 6 are meeting water quality standards. Segments 4a and 2 are not meeting the selenium standard as a whole, but the portions of the planning area within segment 4a are not impaired for selenium for the reasons given above (segment 2 continues to be impaired as a result of upstream conditions outside of BLM control). BLM management would not have the ability to affect the primary cause of selenium pollution in the Gunnison River Valley, which is crop irrigation on private lands.

The recently established in-stream flow rights in the NCA are sufficient to protect water-related values in the NCA, as mandated by the NCA's designating legislation. The one exception to this is the Gunnison River, where water flows have a significant deviation from natural flows. The recent establishment of a senior water right for Black Canyon of the Gunnison National Park should help to establish a more natural flow regime on the Gunnison River, particularly in its establishment of a peak spring flow.

Management Opportunities

- BLM is requesting funding for collecting baseline stream channel morphologic data in Big and Little Dominguez Creeks. Stream flow and water quality data will also be collected. Continued monitoring will be critical to evaluate the effects of management in the planning area. Monitoring results should help in development of mitigation and protection measures as they relate to increased recreation usage.
- BLM intends to partner with USGS (and other interested parties) for installation and maintenance of one stream gauge in Dominguez Creek, subject to wilderness regulations.
- The BLM needs to consider impacts to all resources associated with increased recreational use. Carefully evaluate the consequences of increased access (trails) to sensitive areas.
 - The use of horses or other livestock for transportation needs to be carefully regulated near all water sources.
 - Development of camping areas within and adjacent to riparian zones must be well thought out.
- BLM needs to continue working with USFS to ensure headwaters areas are maintained in functional condition (e.g. treatment of invasive PJ...).
- Vegetation treatments should continue within the planning area to ensure desired plant communities and that natural fire regimes persist.
- Installation of a permanent stream gauge near the mouth of Dominguez Creek should be considered.

- Reclamation of travel facilities identified to be adversely impacting soil and water resources.
- Travel management guidance to protect soil and water resources.
- Educational outreach at trail heads informing public of sensitive resources and what steps can be taken to mitigate impacts (e.g. riparian areas, springs/seeps, stream channels and floodplains).
- Several stream structures were constructed in 1994 by Boy Scout troops in Upper Big Dominguez Creek near the existing camp ground. These structures are not functioning as intended and should be removed. Intent was to create fish habitat but they resulted in over widening of the channel and a loss of pool habitat.

2.4 Nature Resources

The Omnibus Act of 2009 listed as purposes of the NCA's designation the natural, wildlife and riparian resources of the area. All three of these purposes can be found within this broader *Natural Resources* section. In addition, other aspects of the D-E NCA's natural resources are included in this section. This section is broken down into the following sub-sections:

- 2.4.1 Soils
- 2.4.2 Native Upland Vegetative Communities
- 2.4.3 Riparian
- 2.4.4 Weeds
- 2.4.5 Special Status Species
- 2.4.6 Wildlife
- 2.4.7 Aquatic Systems
- 2.4.8 Fire and Fuels

2.4.1 Soils

Soils form the basis for the natural biological functions of the D-E NCA. Through their relationship with water and topography, soils dictate the vegetation found throughout the D-E NCA. Soils can also be fragile resources. Resource uses can lead to soil degradation, which can ripple through the rest of the components of a natural system, with impacts to plants, animals (both domesticated and wild), fire and fish.

Soil surveys:

Three surveys conducted by the U.S. Department of Agriculture Natural Resources Conservation Service describe soil resources in the planning area: *Soil Survey of Paonia Area, Colorado* (including parts of Delta, Gunnison, and Montrose counties) (59,629 acres), *Soil Survey of Ridgway Area, Colorado*

(including parts of Delta, Montrose, Gunnison and Ouray counties) (31,235 acres), and *Soil Survey of Mesa County, Colorado* (118,452 acres). The most recent soils survey data can be obtained online through the NRCS Soil Data Mart at: <http://soildatamart.nrcs.usda.gov>

Resource Description:

Soil types in the DENCA planning area vary in response to climatic, topographic, and geologic settings. The semi-arid climate of the majority of the planning area is a primary influence on soil development. Low annual precipitation, hot summer temperatures, and high evaporation rates slow the chemical and biological processes needed for soil development and limits potential production of vegetation. Predominately shale and sandstone parent materials coupled with very active geologic erosion also inhibit soil potential. In the higher elevations of the planning area, annual precipitation is upwards of 20 inches, and soil potential is limited more by depth to bedrock and the steepness of the topography. A large percentage of these areas have vegetation cover dominated by brushy species. After fire, these areas have a high probability of producing significant erosion and sediment; ash and other debris often clog stream channels.

Deep soils with little rock content are typically found within the interior portion of mesa tops and alluvial valleys, while shallow rocky soils are found along mesa rims and the side slopes of canyons. Classified according to soil order, the soils commonly found within the planning area include:

Aridisols (from dry climate regimes) and **Entisols** (with very limited soil development), found primarily in low-elevation, more arid portions of the planning area, and containing little organic matter throughout their vertical profile.

Alfisols (with high levels of subsoil development) and **Mollisols** (with darkened, organic matter enriched surfaces), which are predominant at higher elevations.

Fragile Soils

Many soils are termed “fragile” in that they have shallow depth to bedrock, minimal surface layer organic material content and structure, soil textures that are more easily detached and eroded, or are on slopes over 35 percent. The soil map unit descriptions rate all soils in the resource area as to their susceptibility to water erosion. Wind erosion may also be a hazard, particularly when surface litter and vegetation is removed by fire. The following soil/slope characteristics are indicative of a potentially fragile soil or high erosion hazard:

- 1) Soils rated as highly or severely erodible by wind or water, as described in NRCS soil survey reports.
- 2) Soils on slopes over 35 percent, particularly if they have one of the following soil characteristics:
 - (a) a surface texture that is sand, loamy sand, very fine sandy loam, fine sandy loam, silty clay, or clay;
 - (b) a depth to bedrock that is less than 20 inches;
 - (c) an erosion hazard rating of high or very high; and
 - (d) a K (soil erodibility potential) factor more than 0.32.

According to survey data, some 40 percent of the federal lands within D-E NCA, or 86,216 acres can be characterized as having “fragile” soils.

Biological Soil Crust (BSC)

In lower elevation areas with sparse plant cover, BSC provides another important soil cover component. BSC is comprised of a complex mosaic of green algae, lichens, mosses, cyanobacteria, and other bacteria (BLM 2001), and serves many beneficial functions to protect and enhance soil productivity, including acting as a stabilizer to inhibit erosion of surface soils. BSC is most prevalent in portions of the planning area that receive below 14 inches of annual precipitation, and on terrain with less than a 25 percent slope. In areas receiving higher than 14 inches of annual precipitation, competition from vascular plants reduces the occurrence of BSC, and on terrain with greater than a 25 percent slope, erosional forces act to minimize the establishment of BSC. Soil texture and chemistry can also be factors in determining the density and composition of BSC communities.

Saline Soils

For the purpose of this planning effort, “saline soils” are defined as those soils with a specific conductance range equaling or exceeding 8 mmohs/cm². Salinity concentrations in surface soils vary according to site-specific topography, local climate, and the geologic member that weathered to produce the soil. Shale in steep badland areas generally exhibits higher surface salinity concentrations than valley fill or outwash, shale-derived soils. Within badland areas, southerly and westerly hill slope aspects have higher surface salinity levels than more northerly aspects. Salinity concentrations also tend to be higher in more arid portions of the planning area. Saline soils are mapped over approximately 977 acres under federal management within the NCA.

Mancos Shale is the primary shale formation that characteristically weathers to produce fine-textured, silty clay loam soils. Additionally, the Mancos Shale is a marine-deposited evaporite—a sediment resulting from the evaporation of ancient water bodies—and as a result, often contains excessive levels of selenium (a non-metallic chemical element) and a variety of dissolvable salts, both of which can degrade water quality in receiving streams when mobilized by wind or water processes. Approximately 6,022 acres of Mancos shale are situated within the planning unit boundary (based on USGS Moab Quad 1:250k and BLM land status maps).

Resource Condition

Colorado Public Land Health Standards describe conditions needed to sustain public land health, and relate to all uses of the public lands. Standards are applied on a landscape scale and relate to the potential of the landscape. Standard 1 relates to soil health across the landscape.

Standard 1 states that upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, land form, and geologic processes. Adequate soil infiltration and permeability allows for the accumulation of soil moisture necessary for optimal plant growth and vigor, and minimizes surface runoff. Indicators are:

- Expression of rills, soil pedestals is minimal.
- Evidence of actively-eroding gullies (incised channels) is minimal.
- Canopy and ground cover are appropriate.
- There is litter accumulating in place and is not sorted by normal overland water flow.
- There is appropriate organic matter in soil.
- There is diversity of plant species with a variety of root depths.
- Upland swales have vegetation cover or density greater than that of adjacent uplands.

- There are vigorous, desirable plants.

Soil resources on lands within the planning area were rated in one of three categories based upon Land Health Standard 1: 1) meeting the standard, 2) meeting the standard with problems 3) or not meeting the standard. The soil rating for each LHA unit is shown in Table 2.4.1-1 and Map 2.4.1-1.

TABLE 2.4.1-1: FINDINGS ON PUBLIC LAND HEALTH STANDARD I

	Land Meeting Standard 1 (acres)	Standard 1 with Problems (acres)	Land Not Meeting Standard 1 (acres)	Land Not Evaluated (acres)
Total NCA	188,401 (87%)	9,226 (4%)	4,553 (2%)	15,708 (7%)

The NCA as a whole exhibits fair to good soil health. Soils in the assessed landscape tend to be highly erosive, making it difficult to determine the degree of departure from natural conditions.

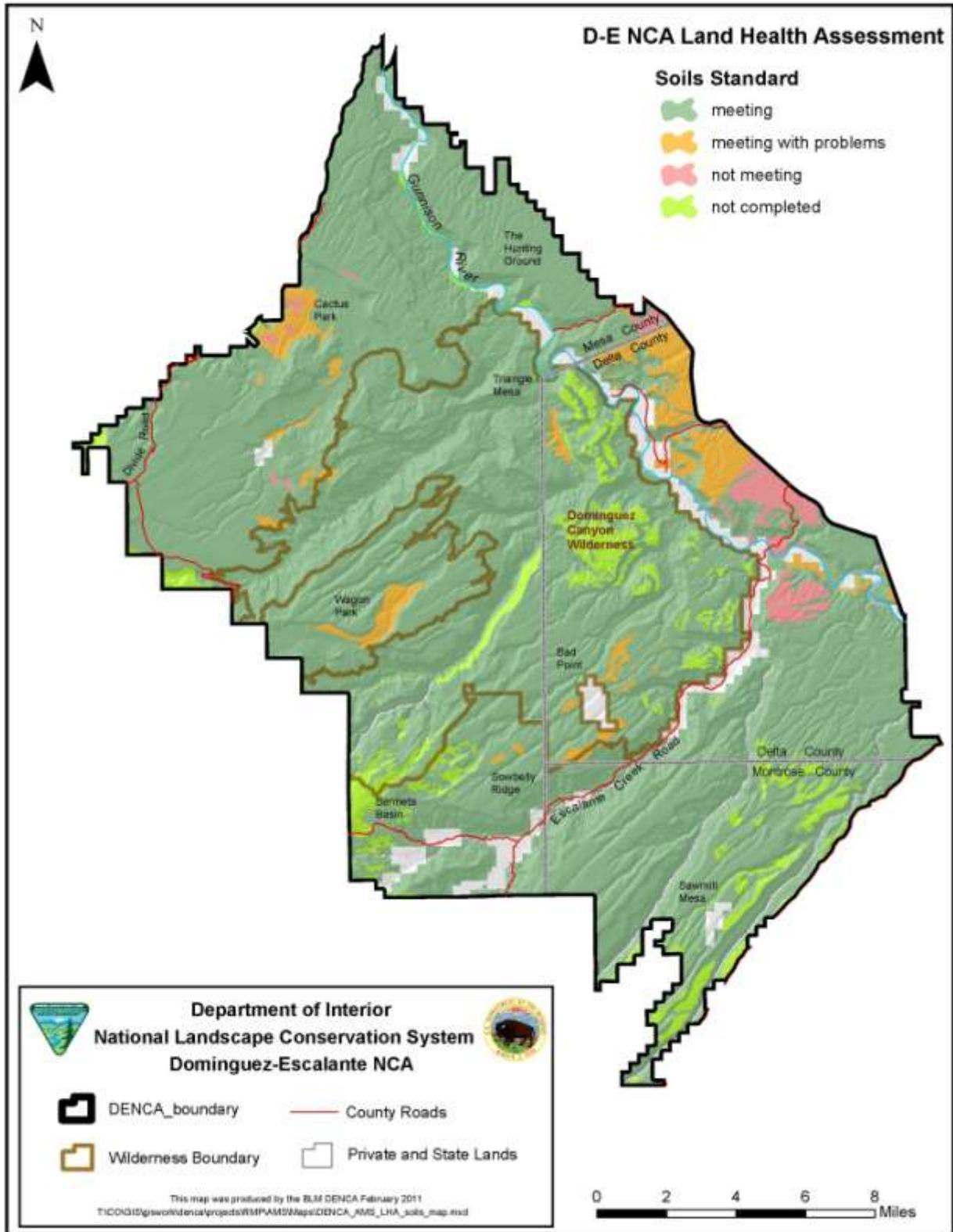
Impacts on soil resources are the result of a wide variety of activities that include historic mining, grazing, recreation, and climatic-related events. Soil resources support range and forest plant communities that stabilize the soil surface and protect the watershed. The potential for maintaining or restoring these communities and conserving the soil resource is dependent on the soil types and how the resource is managed.

Land health assessments noted excessive erosion in some areas that were chained and reseeded with crested wheat seedings in the 1960s for livestock range improvement. However not all treatments exhibited excessive erosion, and some untreated areas seemed to be experiencing high levels of erosion. The effects of spring grazing use needs to be monitored, as do any increases in bare ground, and compaction. Loss of vegetation cover can result in reductions in soil health and substantial increases in soil erosion. In the higher elevations, woody species may need treatment to allow more grasses and forbs to establish, which reduces the potential for accelerated soil loss. In the Hunting Ground, erosion tended to be accompanied by invasive species (cheatgrass, annual wheatgrass, halogeton), a lack of perennial vegetation, and soil compaction.

Trends and Forecast

Climate change, the spread of invasive plants and extended periods of drought may reduce reclamation potential for disturbed soils in the area (this could also leave the area vulnerable to further weed

MAP 2.4.1-1 PUBLIC LAND HEALTH STANDARD I, SOILS



infestations). Increased visitation may result in increased disturbance associated with foot, horse, and motorized travel both on and off routes. Increased disturbance may result in accelerated erosion and loss of topsoil. If spring grazing is not properly managed, invasive species would become more prevalent in the landscape, thus affecting soil stability.

Current Management Direction

Soil resource management is guided by the Colorado Standards for Public Land Health and Guidelines for Livestock Grazing. Designated indicators are used to determine if the standards for soils are being met. Rilling, gully formation, canopy cover, litter accumulation, litter movement, the amount of organic matter in a soil, plant diversity, and vegetation density are factors used in determining soil health.

Application of Land Health Standards will continue to be an important method of evaluating the condition of soils. A revised BLM technical reference, 1734-6, Version 4-2005, directs the implementation of land health monitoring. This reference calls for a greater emphasis on matching land health evaluation areas to the appropriate ecological site and its related soils. Consequently, the identification of soils and subsequent evaluation require greater soils expertise in the field.

The BLM uses soil surveys available from the National Resources Conservation Service to help in making land management decisions based on soil-related hazards or limitations. Soils are mapped according to the boundaries of major land resource areas, which are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA 2006). Each soil survey describes the specific properties of soils in the area surveyed and shows the location of each kind of soil on detailed maps. Soil map units are used to make management decisions that would likely affect soils.

Adequacy of Current Management Direction:

Current impacts to resource, determined by land health assessments:

- Livestock grazing and trailing has contributed to altered vegetative communities, reduced ground cover, elevated soil compaction, and increased vulnerability to erosive forces.
- Spring grazing may be a significant causative factor in decreased vegetative cover and reduced soil protection in the area.
- North of the Gunnison River, utility lines and proximity to residential areas contribute to the prevalence of invasive species, runoff from access roads, and increased soil compaction.
- Recreational (foot/horse/motorized) use continues to impact soil resources as heavy use deteriorates road/trail conditions impairing the function of drainage structures. As a result, runoff from roads and trails is causing accelerated erosion.
- OHV usage in the Cactus Park area continues to deteriorate this landscape. Factors include a high route density, increasing traffic, maintenance efforts falling behind usage and the presence of 1,000 acres of highly erodible soil (GJFO RMP, 1997).

Is current management sufficient?

The current management direction is sufficient (manage to meet standard 1). However, the current level of management will likely not be sufficient given the forecasted increase in recreational usage of

the NCA. There is a high probability that a greater level of funding or staff will be necessary to keep abreast of anticipated recreational growth from hikers, equestrians, mountain bikers and OHV riders.

Management Opportunities:

The following soil-related issues in the planning area should be considered in future land management planning, including land management activities where soil surface disturbance could result in onsite loss of plant productivity and off-site water quality impacts from sediment.

Minimize Erosion and Concentrations of Selenium and Salinity

Some soil units have a higher erosion capacity than others, typically resulting from physical characteristics of the soil and landscape position (e.g. slopes greater than 40 percent, “fragile soils”, and saline soils). Most Mancos Shale soil units have high erosion potential, and also contain excessive levels of salinity and selenium, which can be transported to local streams and rivers from deep-water percolation and the same processes that erode these soils. Selenium is a Gunnison Valley/Grand Valley water quality issue due to its potential impact on the reproductive capacity of certain warm water, native fishes. Salinity is a Colorado River Basin-wide water quality issue that impacts many water uses (including irrigation, industrial, and municipal), primarily in the lower Colorado River basin.

Reduce Disturbance of BSC

Impacts to the soil surface can also disturb and reduce the occurrence of Biologic Soil Crust, an important erosion protection component of soils throughout the planning area. BSC are most prolific on soils that receive less than 14 inches of annual precipitation and have a high component of sand in their texture. However, the USGS/BLM research effort found a significant BSC component on soils derived from Mancos shale, including the harsh environment of south aspect hill slopes. The BSC potential of affected soils should be assessed in future management decisions regarding activities such as livestock grazing, OHV use, and realty actions to minimize impacts where possible.

Additional Management Opportunities

- Spring grazing by livestock should be managed to ensure adequate vegetation cover, particularly in low elevation areas of the NCA that are especially vulnerable to invasive species.
- BLM needs to consider impacts to all resources associated with increased recreational use.
- Carefully evaluate the consequences of increased access (trails) to sensitive areas.
- The use of horses or other livestock for transportation should be carefully managed near all water sources.
- Vegetation treatments should continue within the planning area to ensure desired plant communities and natural fire regimes persist.
- Reclamation of travel facilities identified to be adversely impacting soil and water resources.
- Reclamation of watershed areas impacted by improper design and maintenance of transportation facilities (e.g. Cactus Park).
- Development/maintenance of sustainable travel facilities within the planning area

- Travel management guidance to protect soil and water resources.
- Educational outreach at trail heads informing public of sensitive resources and what steps can be taken to mitigate impacts (e.g. Biologic soil crust, soil erosion, etc...)

2.4.2 Native vegetative communities

A vegetative community is a collection of multiple species of plants that are found in conjunction with one another. Often, these plant species are intricately linked through their relationship with one another (i.e. one plant species is dependent on another and vice versa). These plant species are also often linked within a community as a result of climate, soils, topography and succession. Vegetative communities are the basic component of natural biological functions within the NCA. They also form an essential component of the scenic beauty that draws visitors to the NCA, and provide value for resource uses like recreation, livestock grazing and forest product collection.

How is the Health of Vegetative Communities Evaluated?

The BLM monitors the current condition of its vegetative communities using **BLM Colorado Standards for Public Land Health**. Land health data was collected within the D-E NCA on the Grand Junction Field Office side of the NCA in 2007 and 2009, and on the Uncompahgre Field Office side of the NCA in 2009. Land health is evaluated using five standards. The five standards are:

- Standard 1: Soils
- Standard 2: Riparian Systems
- Standard 3: Healthy Plant Communities
- Standard 4: Special Status Species
- Standard 5: Water Quality

Standard 3 is discussed in greater detail in this section, as it pertains to the health of upland plant communities (Figure 2.4.2-1).

FIGURE 2.4.2-1: COLORADO PUBLIC LAND HEALTH STANDARD 3

Healthy, productive plant and animal communities of native and other desirable species are maintained at viable population levels commensurate with the species and habitat's potential. Plants and animals at both the community and population level are productive, resilient, diverse, vigorous, and able to reproduce and sustain natural fluctuation and ecological processes.

Indicators:

Noxious weeds and undesirable species are minimal in the overall plant community. Native plant and animal communities are spatially distributed across the landscape with a density, composition, and frequency of species suitable to ensure reproductive capability and sustainability.

Plants and animals are present in mixed age classes sufficient to sustain recruitment and mortality fluctuations.

Landscapes exhibit connectivity of habitat or presence of corridors to prevent habitat fragmentation.

Photosynthetic activity is evident throughout the growing season.

Diversity and density of plant and animal species are in balance with habitat/landscape

*potential and exhibit resilience to human activities.
 Appropriate plant litter accumulates, and is evenly distributed across the landscape.
 Landscapes composed of several plant communities that may be in a variety of successional stages and patterns.*

Planning for Priority Species and Vegetation

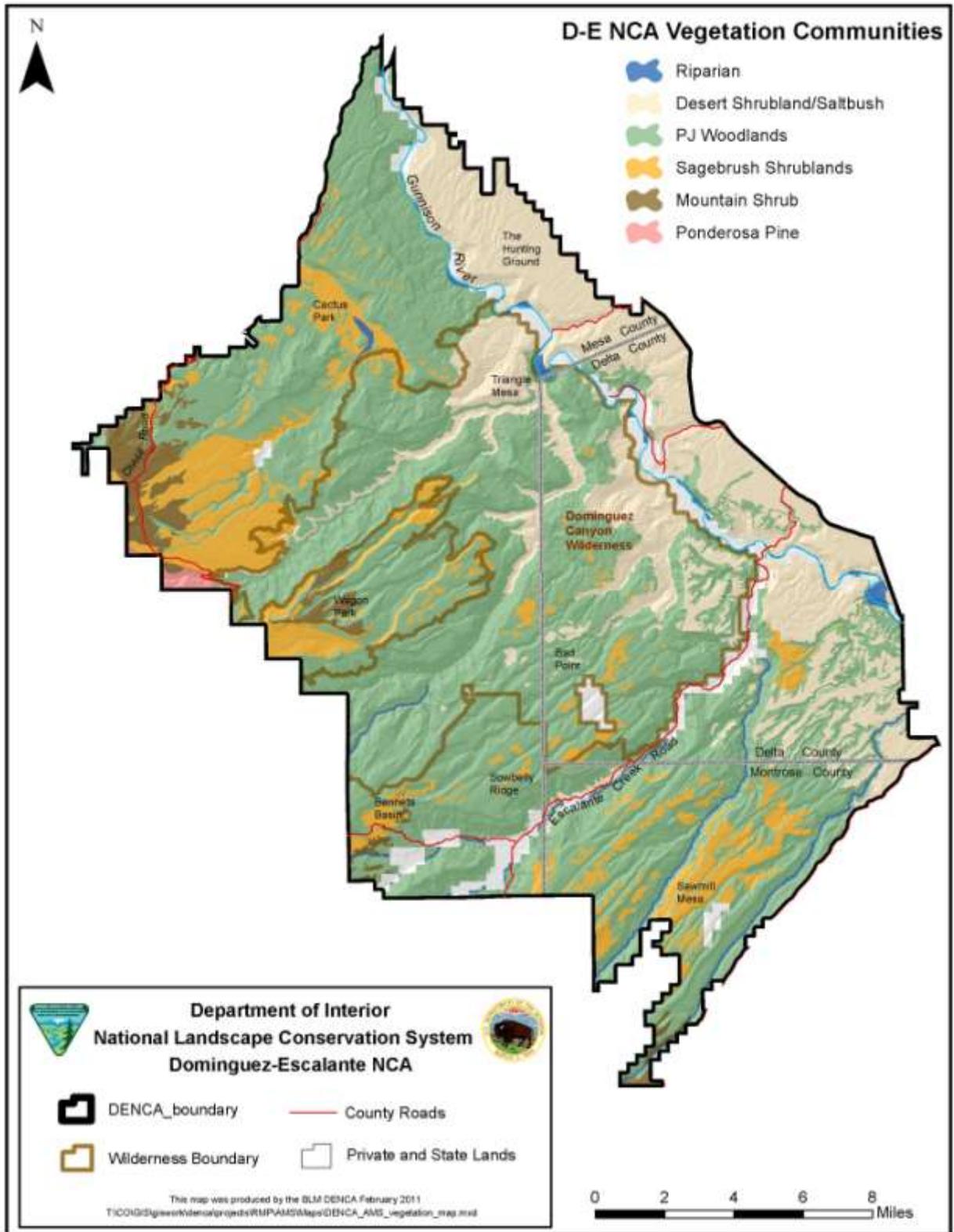
In addition to BLM Colorado land health standards, a comprehensive process for consolidating information on the health of vegetative communities was developed in fall 2010 specifically for the D-E NCA. This tool is called PPSV, or Planning for Priority Species and Vegetation. BLM staff worked in conjunction with the Nature Conservancy, Colorado Natural Heritage Program (CNHP), the US Forest Service, US Fish and Wildlife Service and the Colorado Division of Wildlife in order to assemble this information. Through this effort, the current condition of priority species and vegetation was assessed and rated on a scale of poor to fair to good to very good. PPSV will be used to guide the development of resource management alternatives for biological resources during planning, and will likely be adopted for future monitoring plans once the plan is in place. PPSV is described in more detail in Appendix H.

During the development of PPSV, participants identified five priority upland vegetative communities within the NCA (the use of the term upland excludes riparian vegetative communities, which are described separately in section 2.4.3). These include Douglas fir, spruce-fir and aspen forest communities in the higher elevations of the NCA, nearest the national forest boundary. Because these three additional vegetative communities are rare within the NCA, BLM staff focused specifically on the most common five communities. Table 2.4.2-1 below displays the area currently occupied by each vegetation community within the D-E NCA (also see Maps 2.4.2-1 and 2-2).

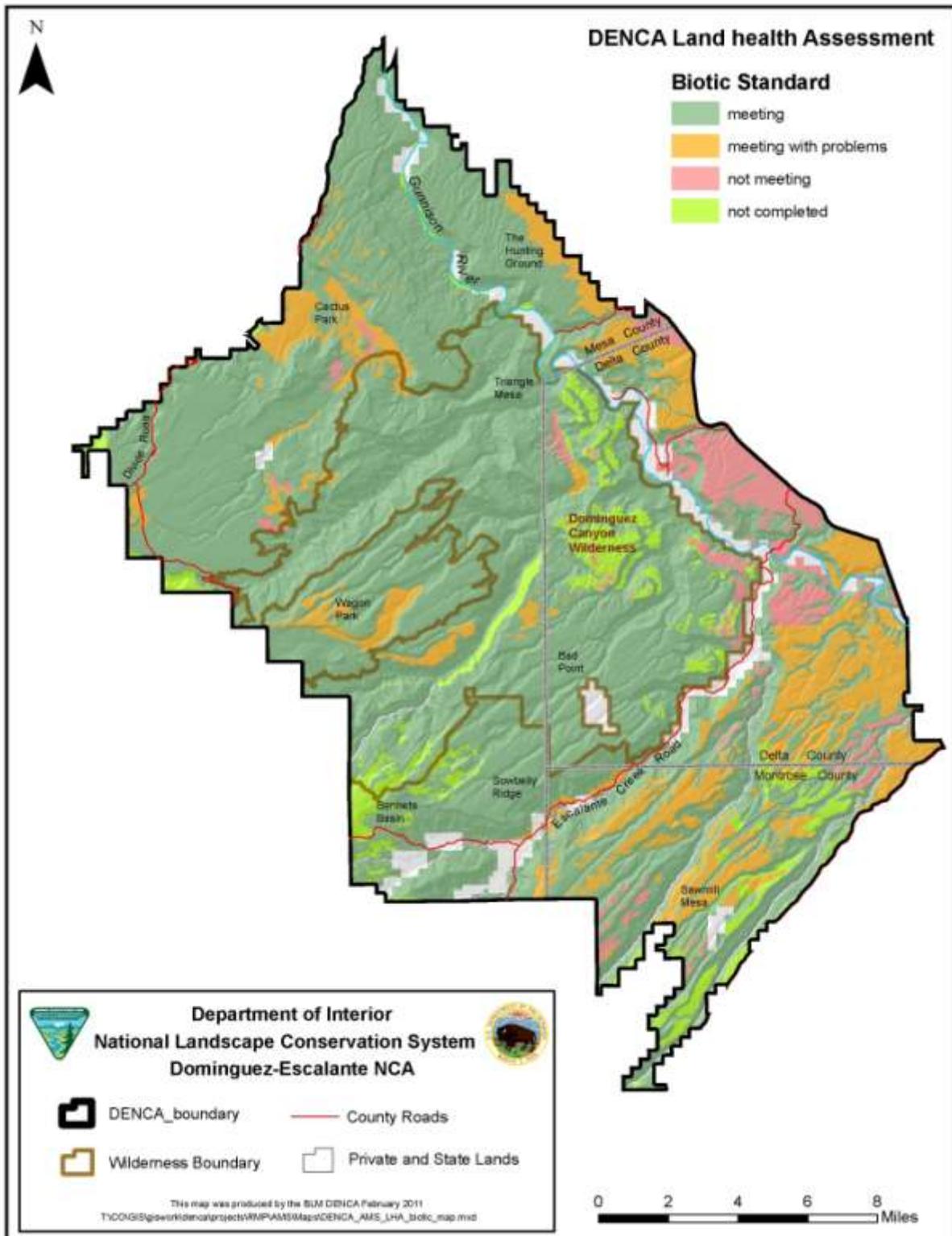
TABLE 2.4.2-1 VEGETATION COMMUNITY DISTRIBUTION

Vegetation Community	Acres	Percentage of upland area in NCA
Desert Shrub/Saltbush	46, 352	22.4%
Mountain Shrub	5,680	2.8%
PJ Woodlands	129,740	62.9%
Ponderosa Pine	766	0.4%
Sagebrush Shrublands	23,873	11.6%

MAP 2.4.2-1 VEGETATION COMMUNITIES



MAP 2.4.2-2 LAND HEALTH ASSESSMENT, BIOTIC



Current Condition

Land Health Standard 3

Overall, 87 percent of the acres within the NCA (and approximately 94 percent of sampled acres) meet Land Health Standard 3. Of this 87 percent, 13 percent meet the standard, but fall into the ‘meeting with problems’ category. While ‘meeting with problems’ is not a required category, this determination distinguishes between areas where indicators revealed land to be in good condition (e.g., ‘meeting’), and areas that had significant problems but that still met land health standards (e.g., ‘meeting with problems’). The most common problems found on NCA lands were the presence of invasive species such as cheatgrass or halogeton, unbalanced functional group compositions (i.e. too little perennial grass and too many shrubs and trees), and low plant diversity. In general, the NCA is in good condition, compared to surrounding BLM lands outside of the NCA.

TABLE 2.4.2-2 STANDARD 3 EVALUATIONS

Standard 3	Meeting	Meeting with Problems	Not Meeting	Not Evaluated
Acres (Percentage)	162,207 (74%)	29,176 (13%)	10,797 (5%)	15,708 (7%)

PPSV

PPSV participants broke the upland vegetative communities in the NCA into 5 priority communities. These communities and the findings taken from PPSV are displayed below.

Desert Shrub/Saltbush

The desert shrub/saltbush vegetative community commonly occurs on saline and other droughty soils in the driest portions of the NCA below 6,000 feet. This vegetative community occupies 21 percent of the NCA. The following shrubs characterize this drought-tolerant vegetation type: shadscale (*Atriplex confertifolia*), Gardner saltbush (*Atriplex gardneri*), mat saltbush (*Atriplex corrugata*), black greasewood, four-wing saltbush, black sagebrush (*Artemisia nova*), winterfat (*Krascheninnikovia lanata*), snakeweed, and prickly pear cactus (*Opuntia polyacantha*). These occur in varying amounts, and in various combinations depending on the soil type and disturbance history of the area. Native grasses in this vegetation type include galleta grass, bottlebrush squirreltail, Salina wild rye (*Leymus salinus*), and Indian rice grass on better condition sites. Many different forbs occur, with some of the most common including wild buckwheats (*Eriogonum* spp.), wild onions (*Alium* spp.), and biscuitroots (*Lomatium* and *Cymopterus* spp.).

A number of BLM sensitive wildlife species are known to currently or formerly occupy this vegetative community within the NCA, including desert bighorn sheep, white-tailed prairie dogs, burrowing owls, kit fox, pronghorn, ferruginous hawk, long-nosed leopard lizards and midget-faded rattlesnakes. The Colorado hookless cactus, a federally threatened plant species, can also be found in this vegetative community within the NCA.

BLM staff identified five attributes and indicators for evaluating the condition of the desert shrub/saltbush vegetative community within the NCA. These are displayed in Table 2.4.2-3. The NCA’s desert shrub/saltbush communities are in a fair or poor condition for four of the five

attributes/indicators listed. A high concentration of land health problems are found in this vegetative community as a result of:

- Proximity of this vegetative community to Highway 50, the communities of Whitewater and Delta and utility corridors, which has led to disturbance.
- Vulnerability of the soils and vegetation to prolonged drought, and the difficulties this presents to recovery from disturbance.
- Presence of a historic domestic sheep travel corridor through the Hunting Grounds zone that lies between the Gunnison River and Highway 50. This corridor was used to transport sheeps from the San Juan Mountains to low elevation grazing country in Utah, and altered the vegetative composition of this area of the NCA.
- Loss of native grasses and perennial forbs, which is thought to be largely a result of historic over-utilization by livestock
- Vulnerability to cheatgrass and halogeton, both of which are noxious weeds and can prevent the re-establishment of native plants and can lead to significant soil problems. These plants often dominate areas as a result of disturbance and/or over-utilization by livestock and wildlife

TABLE 2.4.2-3 ATTRIBUTES FOR EVALUATING DESERT SHRUB/SALTBUSH

Attribute	Indicator	Data Source	Condition Rating	Rationale for Fair or Poor Condition Rating
Functional Group Composition	Percent of acres with insignificant deviation from expected functional group composition	Land Health Assessments	Poor	Too few acres have sufficient cover of native grasses and forbs.
Presence/abundance of key functional guilds	Presence of white tailed prairie dog colonies in suitable habitat	Colorado Division of Wildlife	Fair	White-tailed prairie dogs are not present in enough of their suitable habitat.
Species composition/dominance	Percent of acres meeting Land Health Standard 3	Land Health Assessments	Fair	Too many acres are not meeting or meeting with problems.
Understory Invasives	Percent of acres with little to no understory invasive plant cover	Land Health Assessments	Poor	Too many acres have infestations by invasive plants, predominantly cheatgrass and halogeton
Disturbance Regime	Percent of acres in early seral stage	Ecological Site Inventory and Land Health Assessments	Good	Not Applicable

Mountain Shrub

The mountain shrub vegetative community occurs at elevations ranging from 7,000-9,000 feet, and makes up 5.1 percent of the NCA. Birchleaf mountain mahogany, Utah serviceberry, and Gambel oak are prominent components. Soils, slope aspect, and fire history influence the character and distribution of this vegetative community. Common herbaceous species include elk sedge (*Carex geyeri*), Letterman’s needlegrass (*Acnatherum lettermanii*), Kentucky bluegrass (*Poa pratensis*), muttongrass (*Poa fendleriana*), Sandberg bluegrass (*Poa secunda*), bottlebrush squirreltail (*Elymus elymoides*), western wheatgrass (*Pascopyrum smithii*), slender wheatgrass (*Elymus trachycaulus*), and nodding brome (*Bromus anomalus*). Forbs are numerous, with many species. Among the most widespread and dominant are western yarrow (*Achillea millefolium*), lupine (*Lupinus* spp.), biscuitroot (*Lomatium* spp.), and aspen peavine (*Lathyrus lanzwertii*).

BLM sensitive species that occupy this vegetative community include sharp-tailed grouse. Big game like elk and deer also utilize this vegetative community within the NCA.

BLM staff identified four sets of attributes and indicators for evaluating the health of this vegetative community. These indicators were used to determine the current condition of this vegetative community. The mountain shrub vegetative community is currently in good or very good condition within the NCA. Because this vegetative community is at a higher elevation and is associated with a higher annual rainfall, it is less prone to invasion by non-native plants like cheatgrass. Its relative health can also be explained by the fact that it is not found in close proximity to any major highways, utility rights-of-way or residential areas. The results are displayed in Table 2.4.2-4 below.

TABLE 2.4.2-4 ATTRIBUTES FOR EVALUATING MOUNTAIN SHRUB

Attribute	Indicator	Data Source	Condition Rating	Rationale for Fair or Poor Condition Rating
Age Class Structure	Number of acres in early, mid and late age classes	Best estimation based on specialist opinion	Good	Not Applicable
Functional Group Composition	Percent of acres with insignificant deviation from expected functional group composition	Land Health Assessments	Very Good	Not Applicable
Understory Invasives	Percent of acres with little to no understory invasive plant cover	Land Health Assessments	Good	Not Applicable
Plant Vigor	Percent hedging by big game and domestic livestock	Land Health Assessments	Very Good	Not Applicable

Piñon-Juniper Woodlands

The piñon-juniper woodlands vegetative community occurs between 5,800 and 7,500 feet, and occupies more of the NCA (61 percent) than any other vegetation type. The Piñon-juniper woodland is dominated

by Utah juniper and Colorado Piñon in varying proportions, depending on soil, slope aspect, and elevation. There is typically a sparse and variable understory that may contain remnant shrubs like Wyoming big sagebrush (*Artemisia tridentata wyomingensis*), birchleaf mountain mahogany, Utah serviceberry, snakeweed (*Gutierrezia sarothrae*), and yucca (*Yucca harrimaniae*). Common herbaceous understory species include muttongrass, Indian ricegrass (*Achnatherum hymenoides*), and bottlebrush squirreltail. Primary forbs in this type are western tansy mustard (*Descurainia pinnata*), scarlet globemallow (*Sphaeralcea coccinea*), rock goldenrod (*Petradoria pumila*), lobeleaf groundsel (*Packera multilobata*), and numerous species of Penstemon, Arabis, Astragalus, Lomatium, Erigeron, and Machaeranthera.

A wide variety of BLM sensitive species use piñon-juniper woodlands as their primary habitat, including the midget-faded rattlesnake, five different bat species and the Montrose bladderpod, Grand Junction milkvetch, Naturita milkvetch and Colorado hookless cactus. This vegetative community also provides important habitat for bighorn sheep, elk and deer.

BLM staff identified six indicators and attributes for evaluating the condition of piñon-juniper woodlands in the NCA. These are listed in the table below.

TABLE 2.4.2-5 ATTRIBUTES FOR EVALUATING PIÑON-JUNIPER

Attribute	Indicator	Data Source	Condition Rating	Rationale for Fair or Poor Condition Rating
Soil/sediment stability and movement	Percent of acres meeting Land Health Standard 1	Land Health Assessments	Very Good	Not Applicable
Age Class Structure	Percent of stands classified as old growth	Ecological Site Inventory and PHD research	Good	Not Applicable
Functional Group Composition	Percent of acres with insignificant deviation from expected functional group composition	Land Health Assessments	Good	Not Applicable
Understory Invasives (excluding crested wheatgrass)	Percent of acres with little to no understory invasive plant cover	Land Health Assessments	Very Good	Not Applicable
Presence of crested wheatgrass	Percent of acres with minimal understory cover of crested wheatgrass	Land Health Assessments	Very Good	Not Applicable
Presence/abundance of rare plant species	Population trend	Best Estimation based on Colorado Natural Heritage Program (CNHP) data	Very Good	Not Applicable

In general, piñon-juniper woodlands are in good or very good condition in the NCA. The most common problems associated with PJ Woodlands in the NCA are associated with old vegetation treatments that sought to increase cattle forage in stands of piñon and juniper in the 1960s. Piñon and Juniper are now reoccupying many of these same sites, however, the understory is often dominated by crested wheatgrass, a non-native grass that was often seeded onto sites following piñon and juniper removal. This leads to low understory plant diversity. To address this issue, many of these same sites have been re-treated to increase understory native plant diversity.

Ponderosa Pine Woodlands

The Ponderosa pine vegetative community occupies a small portion of the NCA (0.4 percent). Soils, climate and fire history influence where this community is found and influence the understory vegetation found beneath the canopy of Ponderosa pine. Many of the mountain shrub species are also found in this vegetative community. The more common species include birchleaf mountain mahogany (*Cercocarpus montanus*), Utah serviceberry (*Amelanchier utahensis*), Gambel oak (*Quercus gambelii*), Rocky Mountain juniper (*Juniperus scopulorum*), black chokecherry (*Prunus virginiana*), and roundleaf snowberry (*Symphoricarpos rotundifolius*). The herbaceous component is generally sparse, but contains many of the same grasses and forbs found in the mountain shrub vegetative community described above.

Five species of BLM sensitive bats, milk snakes and northern goshawks could potentially be found within this vegetative community in the NCA.

The BLM identified three sets of attributes and indicators for evaluating the condition of Ponderosa pine woodlands, and they are listed in Table 2.4-7 below.

TABLE 2.4.2-6 ATTRIBUTES FOR EVALUATING PONDEROSA PINE

Attribute	Indicator	Data Source	Condition Rating	Rationale for Fair or Poor Condition Rating
Fire regime	Fire regime condition	Fire regime condition class (FRCC)	Fair	Too many acres are in an altered or unnatural fire regime condition
Understory species composition	Presence of understory shrub/tree species (Piñon, Juniper and Oak)	Best Estimation based on specialist opinion	Good	Not Applicable
Number and size of patches	Number and size of patches	Best Estimation based on specialist opinion	Good	Not Applicable

Sagebrush Shrublands

The sagebrush vegetative community is scattered throughout the NCA and occupies 11 percent of the NCA. This vegetation type typically occurs on deeper soils at elevations ranging from 5,000 to 7,500 feet. The sagebrush community is dominated by Basin big sagebrush (*Artemisia tridentata tridentata*) at

the lowest elevations, Wyoming big sagebrush (*Artemisia tridentata* Nutt. subsp. *wyomingensis*) at mid elevations, and mountain big sagebrush (*Artemisia tridentata* subsp. *Vaseyana*) at the highest elevations. Black sagebrush (*Artemisia nova*) also occurs as a dominant shrub on some soils across this elevation range. The sagebrush type can also occur on steeper, rockier sites, where it is usually successional to PJ woodland vegetative communities and has resulted from removal of the tree canopy by fire or other natural disturbances. Snakeweed, Utah serviceberry, rabbitbrush (genus *Ericamera* or *Chrysothamnus*), and four-wing saltbush (*Atriplex canescens*) can be secondary shrubs in the sagebrush vegetation type. The sagebrush vegetation type contains a variable understory that can include western wheatgrass, galleta grass (*Pleuraphis jamesii*), bottlebrush squirreltail, Indian ricegrass (*Achnatherum hymenoides*), blue grama (*Bouteloua gracilis*), Sandberg bluegrass, muttongrass, needleandthread grass (*Heterostipa comata*), prairie junegrass (*Koeleria macrantha*), and many forbs. Among the most prominent forbs are scarlet globemallow (*Sphaeralcea coccinea*) and longleaf phlox (*Phlox longifolia*).

BLM sensitive bird species can be found in this vegetative community and are/have been known to occur within the NCA. These are Gunnison sagegrouse, Brewer’s sparrow and sage sparrow. Deer and elk also use sagebrush parks, and are important game species in the NCA.

BLM staff identified six indicators for evaluating the condition of sagebrush shrublands within the NCA. These are listed in the table below

TABLE 2.4.2-7 ATTRIBUTES FOR EVALUATING CONDITION OF SAGEBRUSH SHRUBLANDS

Attribute	Indicator	Data Source	Current Rating	Rationale for Fair or Poor Condition Rating
Age Class Structure	Percent of acres with old/decadent sage	Land Health Assessments	Good	Not applicable
Functional Group Composition	Percent of acres with insignificant deviation from expected functional group composition	Land Health Assessments	Fair	Too few acres have sufficient cover of native, perennial grasses and forbs
Understory Invasives (excluding crested wheatgrass)	Percent of acres with little to no understory invasive plant cover	Land Health Assessments	Fair	Too many acres have infestations of cheatgrass
Presence of crested wheatgrass	Percent of acres with minimal understory cover of crested wheatgrass	Land Health Assessment data	Fair	Too many acres are dominated by crested wheatgrass
Wildlife habitat condition	Percent of acres with 10-30% sagebrush cover	Land Health Assessment data	Poor	Too few acres have sufficient shrub cover for sage grouse habitat
Number and size of patches	Number and size of sagebrush patches	Best Estimation	Good	Not applicable

. Many of the sagebrush parks within the NCA have been heavily manipulated for livestock grazing, including chaining in the 1950s and 1960s to increase grass production, seeding with the non-native

crested wheatgrass and fire suppression. More recently, many of these sagebrush parks have been re-treated in order to increase understory plant diversity and remove encroaching piñon and juniper, and older sagebrush. Largely as a result of this manipulation and as a result of over-utilization by livestock and big game, the sagebrush shrublands vegetative community is in less-than ideal condition within the NCA (see land health assessments).

Trends and Forecast

Generally, the vegetative communities in the NCA are in a healthy condition as compared to areas outside of the NCA. The two vegetative communities that have the most significant problems, and will likely pose the most significant management challenges in the future, are desert shrub/saltbush and sagebrush shrublands. Piñon-juniper woodlands and mountain shrub communities will likely remain in good condition, unless significant disturbance to large areas of the NCA occurs in the near future. A major fire in piñon-juniper woodlands could lead to cheatgrass invasion and declining land health. Fire and fuels should be managed to prevent this from happening.

In desert shrubland/saltbush vegetative communities, problems are largely due to a combination of historical livestock grazing, drought and disturbance from recreation and rights-of-way. Given the greater level of protection anticipated for the area as an NCA, conditions are expected to improve. However, major disturbances and severe drought could lead to the spread of invasive species and thus declining health. In particular, the increased frequency of drought anticipated in some models of climate change could lead to declining health in these low-elevation communities

In sagebrush shrubland vegetative communities, attempts to rehabilitate past treatments that have created monocultures of non-native crested wheatgrass, will likely improve the health of this vegetative community over time.

Current Management

D-E NCA currently operates under two separate management plans, the Uncompahgre Basin RMP and the Grand Junction RMP.

Uncompahgre Basin RMP

The Uncompahgre Basin RMP divided its planning area into multiple management units, each with its own emphasis and general guidance for management. This management approach applies to lands within the UFO portion of the NCA, but outside of the Dominguez Canyon Wilderness Study Area. The guidance given for each management unit as they relate to vegetation in the NCA is listed below.

Management Unit 1

This management unit emphasizes livestock grazing and occupies 68,363 acres within the NCA. Given the emphasis on livestock grazing in this management unit, the Uncompahgre Basin RMP authorized the development of new livestock developments and vegetation treatments. The Uncompahgre Basin RMP provides the following guidance for management of this unit:

“The management unit will be managed to improve vegetation conditions and forage availability for livestock grazing.”

Management Unit 3

This management unit emphasizes forestry as a land use and occupies 6,587 acres within the NCA. The Uncompahgre Basin RMP provides the following guidance for management of this unit:

“The management unit will be managed for sustained yield production of the woodland resource within the allowable cut restrictions determined by the TPCC inventory.”

Management Unit 11

This management unit emphasizes waterfowl management and occupies 2,312 acres along the Gunnison River, including state and private landholdings within the NCA. No vegetation-specific guidance is provided for this management unit in the Uncompahgre Basin RMP.

Management Unit 12

Management Unit 12 is the Escalante Canyon ACEC. Management guidance for this area is provided in the special designation areas section of this document (Chapter 4).

Grand Junction RMP

The Grand Junction RMP did not specifically address vegetation. Instead, vegetation is discussed in the Wildlife Management and the Threatened and Endangered Species Management sections of the RMP. In terms of livestock grazing, the Grand Junction RMP refers to the Grand Junction Grazing Environmental Statement of 1979, which applies to the entire Grand Junction Field Office including the northern half of the NCA. The following aspects of this statement are relevant to vegetative communities:

- Provide an improved range condition capable of supplying 152,137 animal unit months (AUMs) of forage for livestock, wildlife, and other resource uses on a sustained yield basis.
- Provide livestock forage at a sustained yield of 82,400 AUMs annually to increase production of beef, mutton, and wool to meet the American public’s need for these products.
- Minimize wildlife/livestock competition on critical and severe erosion condition classes on 235,159 acres (20 percent).
- Improve range condition by improving vigor, ground cover, and species composition, which would increase the amount of land in good range condition by 372,525 acres (31 percent).
- Reduce the present area in moderate, critical, and severe erosion condition classes by 235,159 acres (20 percent).

Amendments

Both the Grand Junction and Uncompahgre Basin RMPs were amended to reflect new guidelines for public land health and livestock grazing management on BLM lands in the state of Colorado. The vegetation-specific guidelines are listed below.

- Native plant species and natural revegetation are emphasized in the support of sustaining ecological functions and site integrity. Where reseeding is required, on land treatment efforts, emphasis will be placed on using native plant species. Seeding of non-native plant species will be considered based on local goals, native seed availability and cost, persistence of non-native

plants and annuals and noxious weeds on the site, and composition of non-natives in the seed mix.

- Natural occurrences such as fire, drought, flooding, and prescribed land treatments should be combined with livestock management practices to move toward the sustainability of biological diversity across the landscape, including the maintenance, restoration, or enhancement of habitat to promote and assist the recovery and conservation of threatened, endangered, or other special status species, by helping to provide natural vegetation patterns, a mosaic of successional stages, and vegetation corridors, and thus minimizing habitat fragmentation.

Recent/Ongoing Projects within the NCA

Vegetation treatments have been done in recent years with multiple and overlapping objectives that include wildlife, fuel reduction, rangeland improvement and improvement of watershed conditions. In many cases, these treatments have been done in areas that were once chained and re-seeded with the non-native crested wheatgrass to improve livestock forage conditions. More recent treatments have generally used roller-choppers and were re-seeded with native grasses and forbs. All of these rehabilitation vegetation treatments have been done since the year 2000. The acreage of these treatments is provided below.

TABLE 2.4.2-8 VEGETATION TREATMENTS SINCE 2000

Roller-Chop Vegetation Treatments	Acres Treated
Completed	6,034
Proposed	1,256
Total NCA	7,290

Adequacy of Current Management

Both the Grand Junction and Uncompahgre Basin RMPs place little emphasis on the natural vegetative communities within the NCA. Instead, the focus of both RMPs is on forage production for both wildlife and livestock. Given that the ‘natural’ resources of the NCA were one of the cited purposes of the creation of the NCA itself, the focus of the D-E NCA’s guiding legislation and the focus of the currently active RMPs for the NCA are in conflict. While amendments added to both RMPs mandated both BLM field offices to focus more on natural vegetative processes and communities, additional RMP guidance regarding vegetation management is needed to provide adequate protection for the ‘natural’ resources of the NCA. The adoption of PPSV as a guide for future management is one major step towards improving management of native vegetation in the NCA.

Despite the focus in both current RMPs on forage production and the absence of guidance on natural vegetative communities, these same communities are in good shape when compared to BLM-managed areas outside of the NCA. This is likely a reflection of the remoteness of much of the NCA. Those areas that are in close proximity to major highways and/or residential communities are in poorer condition than those areas that are more remote.

Tamarisk, Russian olive, hoary cress/tall whitetop, knapweeds and other noxious weeds are a problem on several of the riparian areas. Weed management and reclamation efforts should continue and increase in these areas (Dominguez-Escalante Land Health Assessment, 2010).

Management Opportunities

The following list of management opportunities refers directly to the indicators identified using PPSV (Appendix H). The majority of these opportunities were identified in land health assessments. The remainder is based on the opinions of BLM ecologists and biologists.

Functional Group Composition (all vegetation types)

- Revise grazing permit terms to include grazing stipulations that limit seasonal use on palatable plants to 50 percent, limit growing season use to 15 days, and prevent spring and fall grazing in same areas in same year. Allow late winter/spring grazing only with strategy to provide periodic rest.
- Increase grazing compliance monitoring on timing, location, and duration of use, as well as on grazing utilization to ensure permit terms are adhered to.
- Revise standard seed mixes (native grasses, forbs, shrubs), soil amendments, soil preparation efforts for all zones, identify acceptable levels and timeframes for success, temporary fencing Best Management Practices for reclamation.

Understory Invasives (all vegetation types)

- Improve weed awareness among staff and public to increase effectiveness of Early Detection/Early Response weed management strategy.
- For new land use authorizations, require preconstruction treatment of existing weeds and control of invasive exotics like cheatgrass in weed-free areas. In existing infested areas, treat through collaborative effort.
- Develop coordinated weed management strategy for Dominguez-Escalante NCA that includes biological, recreation and realty involvement for establishing treatment priorities.
- Treat weeds associated with reservoirs, roads, and rights-of-way in lands classified as not meeting or having problems meeting Land Health Standard 3.

Sagebrush- Crested Wheatgrass

- Restore diversity in crested wheatgrass stands through experimentation with different approaches and then widespread application of successful methods.

Sagebrush- Sagebrush Patches and Age Class Structure

- Increase earlier seral stages on landscape through use of fire (Appropriate Management Response) and mechanical treatments that revitalize shrubs using experimentation approach.

- Slash or burn young trees returning to previous areas which had been rollerchopped (which are mainly sagebrush patches now)
- Increase earlier seral stages on landscape (earlier stages at lower elevations would likely become sagebrush patches) through use of fire (Appropriate Management Response) and mechanical treatments that revitalize shrubs using experimentation approach.

PJ Woodlands- Functional Group Composition

- Improve functional group composition by experimenting with spot treatments (thin trees and seed with native species) in dense piñon-juniper stands. Integrate spot treatment concept into fuelwood and Christmas tree harvest plan.

PJ Woodlands-Age Class Structure

- Develop protective stipulations for fuelwood harvest plan that include leaving standing dead trees, identifying areas which should be protected from harvest, treatment, or other types of removal.

Mountain Shrub- Age Class Structure

- Increase earlier seral stages on landscape through use of fire (Appropriate Management Response) and mechanical treatments which will create early seral patches of mountain shrub vegetation and will revitalize shrubs using experimentation approach.

Desert Shrub/saltbush- Functional Group Composition

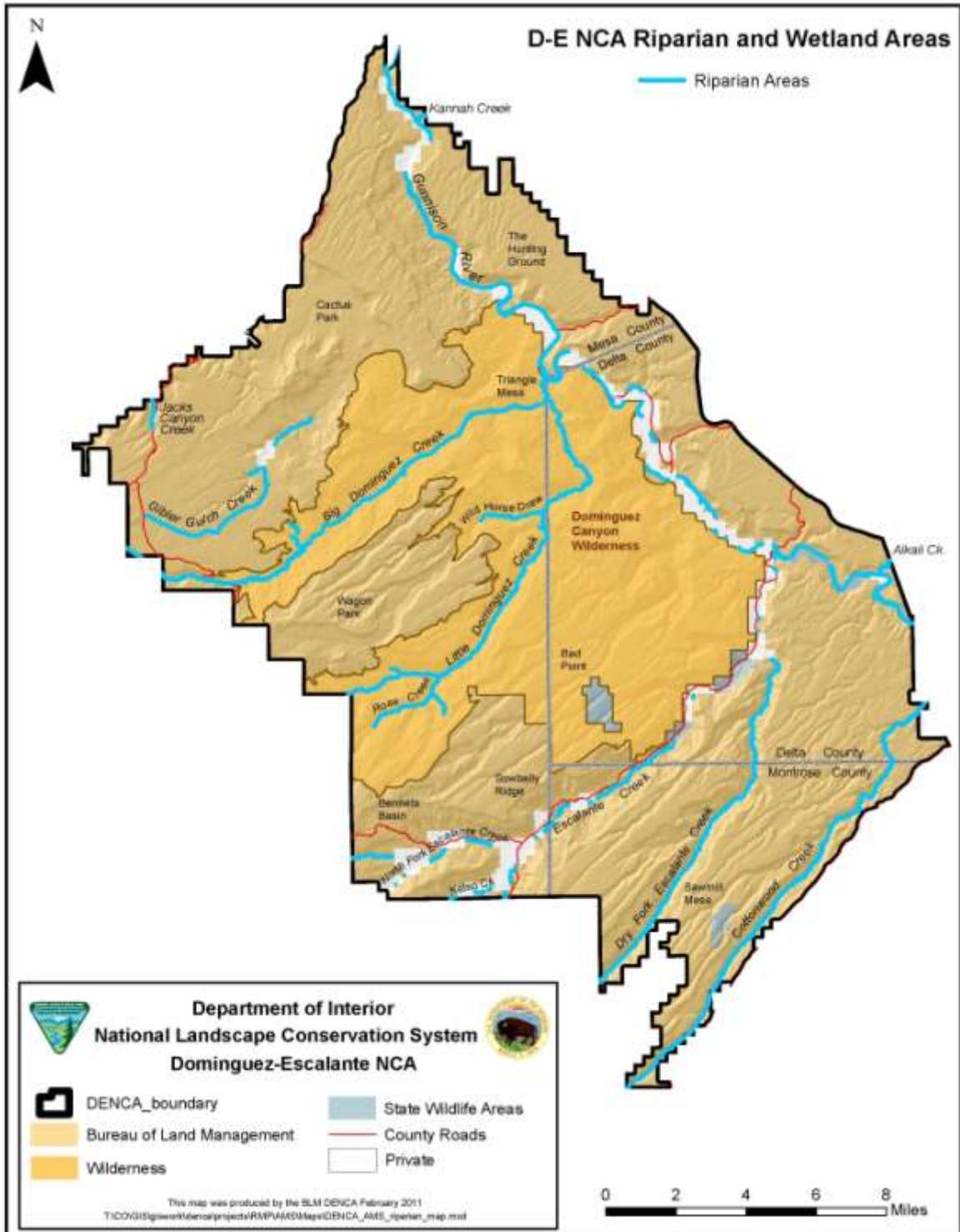
- Research techniques for rehabilitating degraded salt desert vegetation near Highway 50. Apply best restoration techniques to degraded zone, collaborate with ROW holders in area. Restore degraded vegetation—inter-seed contour furrows with native seed mix, using rangeland drill or sheep trample and reclaim the Escalante Gravel Pit and the old Highway 50 rest area.

2.4.3 Riparian

Riparian areas are a form of wetland transition between permanently saturated wetland and upland areas. These areas exhibit vegetation or physical characteristics reflective of permanent surface or subsurface water influence. Typical riparian areas are lands along, adjacent to, or contiguous with perennially and intermittently flowing rivers, streams, glacial potholes, and shores of lakes and reservoirs with stable water levels. Excluded are such sites as ephemeral streams or washes that do not exhibit vegetation dependent on free water in the soil (BLM Manual 1737).

Map 2.4.3-1 displays the location of riparian systems in the D-E NCA.

MAP 2.4-3-I D-E NCA RIPARIAN SYSTEMS



Even though riparian and wetlands areas occupy only a small percentage of land, these areas provide a wide range of functions critical to many different wildlife species, water quality, scenery, and recreation (Brimson 2001). Outstanding riparian resources were singled out as one of the 14 purposes for the area's designation as an NCA in the Omnibus Act of 2009.

Indicators

Land Health

The BLM monitors the current condition of its vegetative communities using **BLM Colorado Standards for Public Land Health**. Land health data was collected within the D-E NCA on the Grand Junction Field Office side of the NCA in 2007 and 2009, and on the Uncompahgre Field Office side of the NCA in 2009. Land health is evaluated using 5 standards. The 5 standards are:

Standard 1: Soils

Standard 2: Riparian Systems

Standard 3: Healthy Plant Communities

Standard 4: Special Status Species

Standard 5: Water Quality

Standard 2 pertains to the health of riparian systems, which are lands along, adjacent to, or contiguous with perennially and intermittently flowing rivers, streams, glacial potholes, and shores of lakes and reservoirs with stable water levels (Figure 2.4.3-1).

FIGURE 2.4.3-1 – COLORADO PUBLIC LAND HEALTH STANDARD 2

Riparian systems function properly and have the ability to recover from major disturbance such as fire and 100 year floods. Riparian vegetation captures sediment, and provides forage, habitat and biodiversity. Water quality is improved or maintained. Stable soils store and release water slowly.

Indicators:

Vegetation is dominated by an appropriate mix of native or desirable introduced species.

Vigorous, desirable plants are present.

There is vegetation with diverse age class structure, appropriate vertical structure, and adequate composition, cover and density.

Streambank vegetation is present and is comprised of species and communities that have root systems capable of withstanding high streamflow events.

Plant species present indicate maintenance of riparian moisture characteristics.

Stream is in balance with the water and sediment being supplied by the watershed (e.g. no headcutting, no excessive erosion or deposition).

Vegetation and free water indicate high water tables.

Vegetation colonizes point bars with a range of age classes and successional stages.

An active floodplain is present.

Residual floodplain vegetation is available to capture and retain sediment and dissipate flood energies.

Stream channels have appropriate size and meander patterns for the streams' position in the landscape, and parent materials.

Woody debris contributes to the character of the stream channel morphology.

Proper Functioning Condition (PFC)

Information on the condition of these riparian areas and wetlands is available from PFC assessments that have been conducted from 1993 to the present time. Based on hydrology, vegetation, and erosion/deposition (soils) attributes and processes (Technical Reference BLM-RS-ST-98-001+1737), the PFC assessments place the riparian area in one of five ratings:

- Proper Functioning Condition (PFC)
- Functioning at Risk upward trend (FAR-Up)
- Functioning at Risk downward trend (FAR-Down)
- Nonfunctional (NF)

Each riparian-wetland area has to be judged against its capability and potential (Technical Reference BLM-RS-ST-98-001+1737).

On the northern side of the NCA, PFC assessments have been used to determine ratings for Land Health Standard 2 (Map 2.4-2, Riparian Assessment). A ranking of PFC is interpreted to mean that an area is meeting Colorado Public Land Health Standard 2. Rankings of FAR (Functioning at Risk) or NF (Not Functioning) are interpreted to mean that an area is not meeting Standard 2. On the UFO side of the NCA, PFC is used in conjunction with other information to determine ratings for Land Health Standard 2.

Planning for Priority Species and Vegetation

In addition to BLM Colorado land health standards and PFC, a comprehensive process for consolidating information on the health of vegetative communities was developed in fall 2010 specifically for the D-E NCA. This tool is called PPSV, or Planning for Priority Species and Vegetation (Figure 2.4.2-2), and was used to evaluate riparian areas as well (see Appendix H).

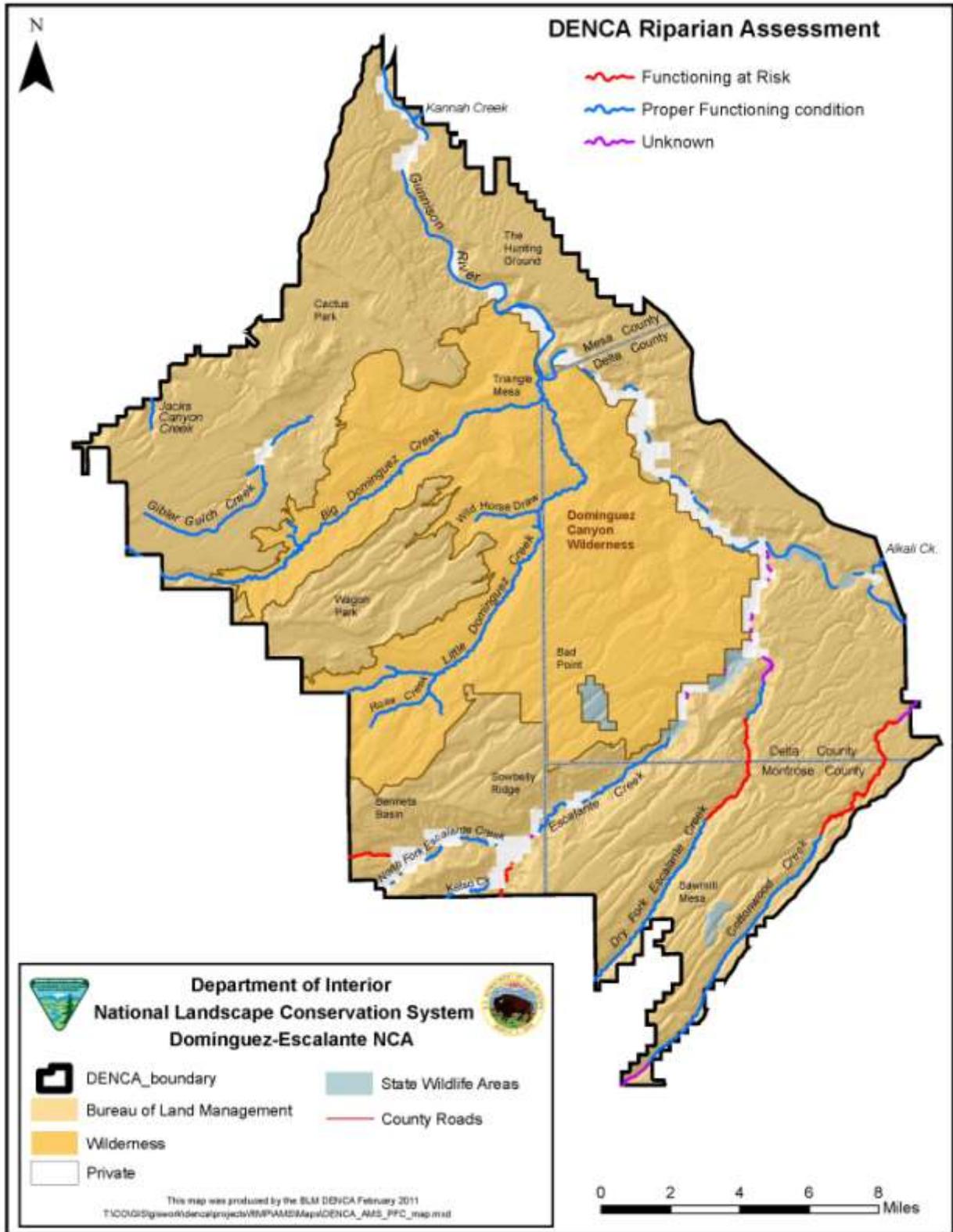
Current Condition

The most recent proper functioning condition (PFC) data for the rivers and creeks in the D-E NCA is displayed in Table 2.4.3-1 and Map 2.4.3-2. Problems leading to Functioning at Risk determinations were found on sections of Cottonwood Creek, Dry Fork Escalante Creek, the upper reach of Escalante Creek and Branch Creek, a small tributary to Escalante Creek. Problems related to inadequate riparian vegetation and stream bank instability. Additional riparian health problems in the NCA are related to the Gunnison River.

TABLE 2.4.3-1: SUMMARY OF RIPARIAN FUNCTION WITHIN THE GJFO PORTION OF THE DENCA

LAND STATUS	PFC (miles) (Number)	FAR Up (miles) (number)	FAR NA (miles) (number)	FAR Down (miles) (Number)	NF (miles) (Number)	NO DATA (miles) (Number)	TOTAL (miles) (acres)
Dominguez LHA							
Streams	84.40	0	12.49	0	0	4.00	100.89
Springs	24	0	0	0	0	4	24

MAP 2.4.3-2 D-E NCA RIPARIAN ASSESSMENT



PPSV

During the development of PPSV, it was noted that PFC was an inadequate measure of riparian health given the emphasis placed on riparian and natural resources in the NCA’s designating legislation. As a result, a set of 11 attributes and indicators was developed for evaluating riparian health in the NCA. These are listed in the table below. Much of the data needed to quantify these measures are, as yet, unavailable. Measures for evaluating the health of the Gunnison River were made separate from measures for tributaries to the Gunnison River because the BLM’s ability to influence the management of this river is limited within the planning area. These limitations include public-private interface, development along the riparian corridor (roads, utility corridors and railroad), and lack of water rights to maintain healthy riparian vegetation.

As can be seen from Table 2.4.3-2, riparian areas along tributaries of the Gunnison River are in good condition. The Gunnison River itself, on the other hand, is in poor or fair condition for a number of indicators. The presence of invasive species, channelization along the banks of the river and an unnatural hydrological regime are all significant problems on the Gunnison River.

Table 2.4.3-2 Attributes for Evaluating Riparian Health

Attribute	Indicator	Data Source	Condition Rating	Rationale for Fair or Poor Condition Rating
Ability of Gunnison River to move	Percent Channelization and RipRap along banks	Evaluation using satellite imagery	Fair	Developments along the Gunnison River have limited the ability of the river to naturally move within the river corridor
Fire/fuel load on Gunnison River	Fuel Load	BLM Greenline data	Good	Not Applicable
Hydrologic regime/surface water in Gunnison River	Hydrograph	USGS flow data	Fair	The flow regime on the Gunnison River is unnatural compared to pre-dam conditions
Hydrologic regime/surface water (excluding Gunnison River, Escalante and Cottonwood Creeks)	Hydrograph	Best estimate based on specialist opinion	Very Good	Not Applicable
Hydrologic regime/surface water in Cottonwood and	Hydrograph	Best estimate based on specialist opinion	Fair	Diversions on these creeks have altered the natural flow

Escalante Creeks				regime
Bank Stability	Percent of miles meeting PFC	Proper Functioning Condition	Good	Not Applicable
Presence of saline grasslands	Percent variation from present conditions in saline grasslands in riparian zones	Best estimate based on specialist opinion	Good	Not Applicable
Species composition/dominance on Gunnison River	Percent of miles with little to no invasive plant cover	BLM Greenline data	Poor	Too much of the riparian vegetation along the Gunnison River is invasive
Species composition/dominance (excluding Gunnison River)	Percent of miles with little to no invasive plant cover	BLM greenline data	Very Good	Not Applicable
Species composition/dominance	Presence of wetland obligate species	BLM greenline data	Fair	Too many riparian areas are losing wetland plant species
Structural Diversity	Percent of sites supporting the historic proportions of willows and cottonwoods	BLM greenline data	Fair	Too few acres have natural proportions of willows and cottonwoods

Current Management

The BLM manages riparian areas to meet Colorado Public Land Health Standards. Problem areas are identified through this process and addressed.

Most management practices for riparian areas and wetlands within the DENCA have been focused on improving grazing management. There have also been efforts involved with the management of recreational uses and limiting disturbance from development.

For grazing related issues, the methods used include: reducing grazing use to the carrying capacity of the area, completing new and modifying existing grazing management systems to provide rest or deferment of upland and riparian areas to improve forage composition and productivity. To improve springs and seeps, modify current spring projects to enhance riparian function and water quality. The standard practice for protecting riparian systems from development by industry has been avoidance of these systems. The Gunnison River has more development in close proximity than any of the other systems. The lower portions of lower Big Dominguez and Little Dominguez canyons were designated as day-use only to help protect the riparian systems.

Some small tamarisk removal projects and cottonwood plantings have occurred along the Gunnison River, largely in areas that are heavily used for recreation (i.e. Bridgeport). The spread of the tamarisk

beetle through this area should also help reduce the cover of tamarisk, a non-native plant that is found in abundance along the Gunnison River.

Adequacy of Current Management

Table 2.4.3-2 displays the results of the PPSV evaluation of the current condition of riparian resources within the D-E NCA. While riparian health is good or very good throughout much of the NCA, riparian health along the Gunnison River and Cottonwood and Escalante Creeks is in fair or poor condition for many indicators. Many of these problems are associated with development (i.e. county roads and the railroad), as well as unnatural water flows that are impacted by upstream water rights. While the BLM has little control over these impacts, steps could be taken by the BLM to work with upstream water users, county governments and the railroad to improve riparian health.

In addition, the abundance of non-native plants along the Gunnison River poses a significant challenge for management. Outside of the Gunnison River, riparian areas in the NCA have little non-native cover. An initiative to reduce the cover of invasive species along the Gunnison River would improve the recreational setting of the area, in addition to riparian health.

The Gunnison River at the junction of Big Dominguez Creek is experiencing high recreational demand in the form of overnight camping. Cottonwood saplings have been planted to improve cover (shade) in the camping areas with good success. To date, this area has been well maintained. There are concerns that as recreation use increases at this site, impacts to riparian vegetation will also increase. Future planning in this area should identify camping areas outside of the riparian zone.

Impacts from Recreation Use

During monitoring of Little Dominguez Creek, in 2009, an area was found where recreationists using horses had camped immediately adjacent to the riparian area and had allowed the horses to graze the riparian area and adjacent uplands. It appeared that this area had been used for several days. Grazing use exceeded 70 percent on grass species and there was bank damage caused by horses accessing the stream.

Now that this area has been designated a wilderness area, use of the area will increase significantly, including demand for outfitters services. Before issuing any outfitter permits for use of this area, particularly with horses, a recreational use plan needs to be prepared which analyzes the impacts of the use and sets limits on use based on the carrying capacity and maintenance of wilderness characteristics. Additionally, efforts must be made to better educate private users to reduce impacts to the riparian areas.

Management Opportunities

The following management opportunities refer directly to the information displayed in Table 2.4.3-2.

Riparian/wetlands- Gunnison River Invasives

- Coordinate with railroad on weed control measures to minimize impacts to riparian vegetation
- Follow up on 2010 weed control along Gunnison River with maintenance treatments. Spot treatment of noxious weeds in riparian areas should be high priority to minimize spread

Riparian/wetlands- Ability of Gunnison River Channel to Move (riprap/channelization)

- Monitor effects of new NPS Gunnison flows on riparian vegetation and channel--may be addressing some of the problems observed. Explore reopening abandoned side channels by removing unnecessary developments.
- Coordinate with railroad on stabilizing riverbank undermining tracks in environmentally-sound manner

Riparian/wetlands- Fuel Load of Tamarisk

- Monitor tamarisk beetle effects, identify areas needing restoration and develop strategies to accomplish riparian vegetation recovery where natural regeneration is not occurring

Riparian/wetlands-Bank Stability

- Reclaim nonfunctional spring developments where the spring has disappeared.
- Redefining the Escalante Boat Launch would prevent further expansion of the launch area and destruction of riparian vegetation. Regular weed control is needed at this site, particularly in areas where people, boats and vehicles and other equipment are passing through weeds and could be vectors for weed transmission. Recommend rehabilitating much of existing site and moving river access across road, upstream.
- Redesign and/or rehab boater/fishing camps which are not effective or are causing riparian damage.
- Coordinate with ROW holders to apply standard best-management practices to address streambank erosion problems (e.g. County Road ROWs) in riparian areas.
- Inspect and enforce compliance along Delta County road ROW along Gunnison River and Dry Fork of Escalante Creek.

Riparian/wetlands- Presence of Wetland Obligate Species

- Add riparian grazing stipulation to all permits with streams. Work on Dry Mesa allotment stock trail location and watering issues for Dry Fork and upper Escalante Creeks, and monitor effectiveness.
- Plant native riparian species, especially cottonwood, in suitable areas along the Gunnison River to increase riparian vegetation diversity and improve habitat where natural regeneration is not happening.

Trends and Forecast

In riparian areas, the acquisition of water rights for many of the NCA's streams will likely stabilize resource conditions over time. The introduction of the tamarisk beetle (discussed in weeds section) will also likely improve conditions, particularly along the Gunnison River.

The acquisition of water rights by the Black Canyon of the Gunnison National Park will likely lead to improved riparian conditions over time on the Gunnison River. These water rights are being used to secure a more natural hydrograph (i.e. high peak flows during the spring), which would likely reduce invasive species along the river and encourage the regeneration of native riparian vegetation.

2.4.4 Weeds

The presence of weeds can be viewed as an indicator of the vegetative health of an ecosystem. Extensive presence of weeds can be seen as an indicator of disturbances in an ecosystem, often caused by livestock grazing, off-highway vehicles, roads and trails.

Indicators of Resource Condition

As of 2008, the entire NCA area, with the exception of the Gunnison River floodplain, was intensively surveyed for noxious weeds. On the northern side of the NCA, inventories were completed during the 2000 field season by BLM crews. Inventories were completed on the southern side of the NCA in 2008. In the state of Colorado, weeds are classified into a system that defines the urgency of eradication efforts. The focus of the inventory (survey) was primarily Colorado List A and B species, and a few List C species which are rare to the GJFO area and UFO area.

Class A: Weed species designated by the Commissioner of Agriculture, for eradication.

Class B: Weed species for which the Commissioner (in consultation with the state noxious weed advisory committee, local governments, and other interested parties) develops and implements state noxious weed management plans designed to stop their continued spread.

Class C: Weed species for which the Commissioner (in consultation with the state noxious weed advisory committee, local governments, and other interested parties) will develop and implement state noxious weed management plans designed to support the efforts of local governing bodies to facilitate more effective integrated weed management on private and public lands. The goal of such plans will not be to stop the continued spread of List C species but to provide additional education, research, and biological control resources to jurisdictions that choose to require management of these species.

Tamarisk along the river can be inventoried fairly accurately by aerial photo interpretation. Elsewhere, on-the-ground observation is best.

During a typical survey for weeds, personnel trained in weed identification use a combination of ATV, horseback, foot, and watercraft to look for weed infestations. All infestations are recorded in GIS with the following attributes: species, location, access, adjacent vegetation, distance to water, size of infestation, percent cover of the weed. All of the above transportation methods were used in D-ENCA.

Disturbed areas and riparian areas are targets for weed surveys: roads, trails, livestock improvements, livestock concentration areas, recreation sites, fires. If a weed is found that exhibits the ability to compete with a healthy plant community (e.g. spotted knapweed), the survey will include areas outside of the disturbance.

Weed Control Guidance and Programs

A June 2007 programmatic EIS, *"Vegetation Treatments using Herbicides on Bureau of Land Management Lands in 17 Western States,"* discusses how herbicides will be applied to BLM-

administered lands, including mitigation measures, standard operating procedures, and analysis of active and inactive ingredients by herbicide.

The BLM coordinates with counties and other entities in and around the planning area in implementing the Integrated Weed Management program. This cooperative effort supports the Integrated Weed Management program and promotes the success of Early Detection/Rapid Response, and the treatment and re-treatment of small and large patches of noxious weeds. A coordinated strategy means that there are more people looking for and treating noxious weeds in a strategic manner on public lands. Support for Integrated Weed Management comes from executive orders, legislation, and strategic documents, including:

- Colorado Noxious Weed Act 8 CCR 1203-15 (2003)
- Presidents Executive Order 13112 (1999)
- Federal Noxious Weed Act of 1974, Public Law 93-692
- BLM Partners Against Weed Plan (BLM's strategic plan)
- Colorado Governor's Executive Order D 00699
- UFO Weed Management Strategy (2007)
- Record of Decision Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (September 2007)

Current Condition

Map 2.4.4-1 and Table 2.4.4-1 summarize the results of the survey within D-ENCA. As noted in the table, some Colorado "B" weeds are considered "A" weeds on BLM lands within the NCA. These weeds are rare to the area and management of infestations is manageable for the weed program.

MAP 2.4.4-I WEED INFESTATIONS

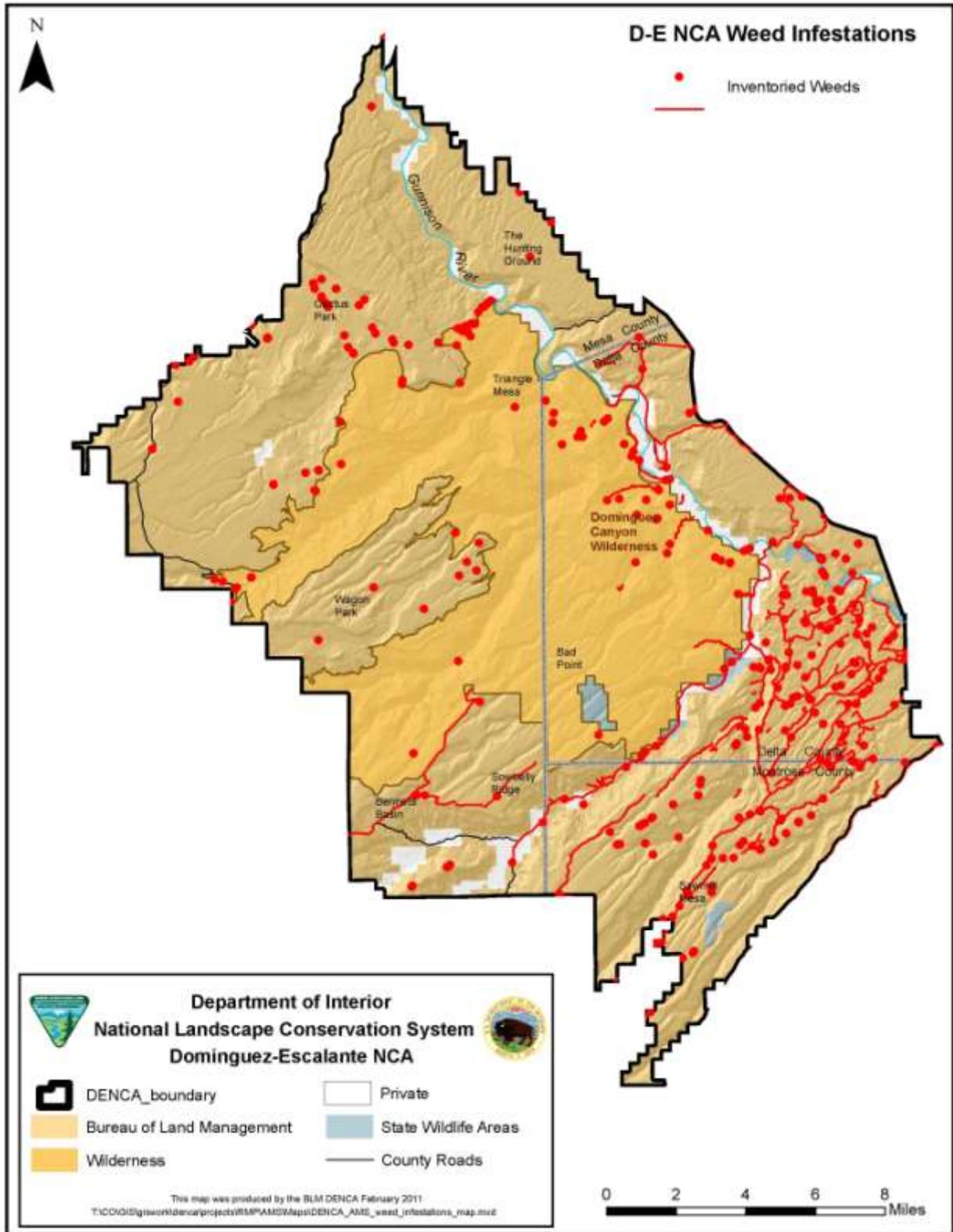


TABLE 2.4.2-1 STATE LISTED NOXIOUS WEEDS KNOWN TO OCCUR IN THE NCA

Species	Category	Primary Occurrence
Cheatgrass	List C	Throughout the NCA in varying amounts. Most notable in desert areas and lower elevation Piñon-Juniper and sagebrush.
Common Burdock	List C	Isolated across NCA in wet areas and heavily disturbed sites.
Halogeton	List C	Abundant in desert areas east of the Gunnison River.
Hoary Cress	List B*	Very rare along Divide Road and upper Gibbler area.
Redstem Filaree	List C	Found on heavily disturbed sites.
Russian Knapweed	List B	Scattered small infestations in uplands. Abundant along Gunnison River.
Russian-olive	List B	Isolated along Gunnison River and lower Big Dominguez Creek.
Salt-cedar (Tamarisk)	List B	Gunnison River heavily infested. Isolated in Big/Little Dominguez creeks. Found in numerous ephemeral drainages and livestock ponds. Rare above PJ-Mountain shrub ecotone.
Spotted Knapweed	List B*	None found in NCA, but occurs in limited amounts on National Forest above NCA.
Yellow Toadflax	List B*	Occasional appearance along Gunnison River. Major infestation on National Forest above NCA boundary.
Sulfur cinquefoil	List B*	None found in NCA, but larger infestations occur on the National Forest just above NCA.
Oxeye Daisy	List B*	Found in Escalante and Dry Fork of Escalante
Jointed goatgrass	List B*	None in NCA, but found along HWY 50 easily moved through traffic and animals.
*Considered an "A" list weed by Grand Junction and UFO Weed Program on BLM lands		

The upland portion of D-ENCA, west of the river, is in good shape from a noxious weed perspective. Of these upland areas, the wilderness is better yet. The uplands are similar to other upland areas of the northern Uncompahgre Plateau, where plant communities are healthy and competitive against noxious weed invasion.

The desert area east of the Gunnison River is similar to other desert regions of the field office, where there is a mix of healthy plant communities and those dominated by annual weed species.

The Gunnison River is similar to the Colorado and Dolores rivers, where substantial areas are dominated by tamarisk and Russian knapweed.

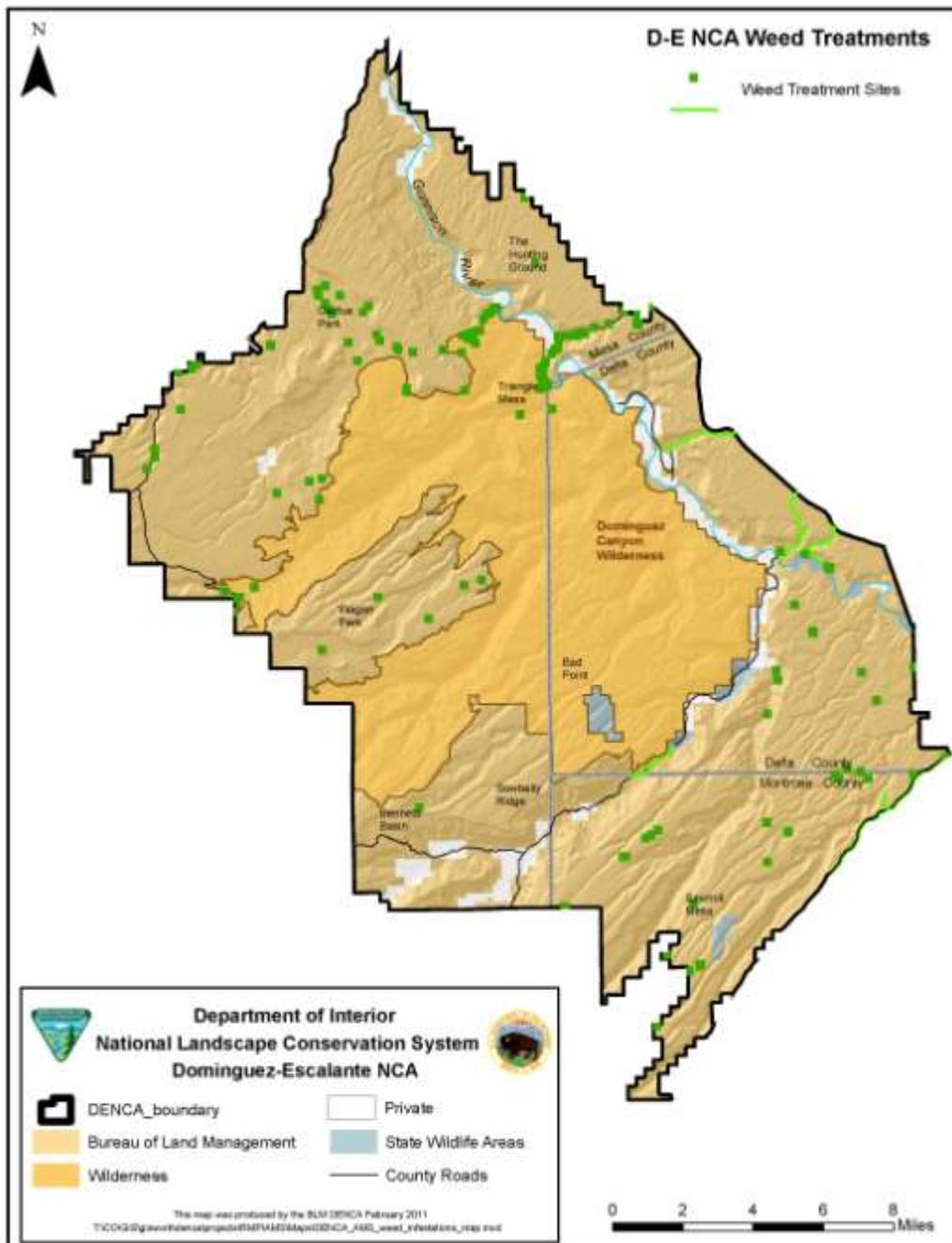
Vehicles are the primary vector for weed spread (from bicycles to motor vehicles). As a result, most weed infestations are located along roads and trails in the NCA. Other vectors include: livestock and livestock developments, wildlife, hikers, wind, heavy equipment, contaminated gravel, water transport of seed and floods. All of the above have contributed to weeds in DENCA.

Treatment Description

The type of treatment depends on the weed and tools available, ranging from herbicides to hand and mechanical treatments and biological treatments. Creeping perennial species such as Russian knapweed and hoary cress respond best to a suite of herbicide treatment. Tamarisk is treated with a combination of methods—biological control with the tamarisk leaf beetle, manual cutting, and herbicide applications. Russian-olive is treated with a combination of manual cutting and an herbicide application.

Another treatment method is to plant competitive species as part of a fire rehab project or a vegetation treatment. (See Map 2.4.4-2)

MAP 2.4.4-2 WEED TREATMENT AREAS



Adequacy of Current Management

The uplands west of the river are stable from a weed perspective. As long as upland plant communities remain healthy and competitive, the weed program strategy will be maintenance of existing infestations and an early detection and rapid response (EDRR) to new infestations. All known upland infestations of hoary cress and Russian knapweed have been treated at least twice. Many of those have been eradicated.

East of the river to Highway 50, vegetation is stable from a perennial noxious weed perspective, but there are large acreages of invasive annual species that have not been targeted up to this point -- except through management changes (such as grazing timing and duration).

The Gunnison River has a good start for widespread restoration with the advent of the tamarisk leaf beetle. There have been targeted Russian knapweed treatments in the Bridgeport area, Escalante Canyon, and Dominguez Canyon areas that have been very successful in reducing this weed and lessening the chance of inadvertent seed transport into the wilderness.

Management Opportunities

The following are management opportunities for weeds in the D-E NCA.

- The weed program will conduct another intensive inventory of the NCA, probably in the next 10 years.
- The Gunnison River should be surveyed by watercraft and infestations logged into GIS.
- On the treatment side, the weed program will continue to re-visit old infestation sites, and respond to newly reported infestations. New reports (from the public, permittees, and BLM staff) are compared to the existing GIS database to determine if the site is already known.
- The Gunnison River will be the target of riparian restoration efforts similar to the efforts on the Colorado River in the Grand Junction Field Office. Efforts will first focus on campsites, cottonwood galleries, and heavily used areas (e.g. Escalante boat launch area, Bridgeport). As with the Colorado, these projects are challenging from a logistical standpoint (water access only) and expensive to undertake.
- Desert areas dominated by annual species such as cheatgrass and halogeton can be targeted for herbicide applications in concert with re-seeding efforts.
- Wildland fires that are susceptible to annual weed invasion will be seeded through the fire rehab program.

2.4.5 Special Status Species

Special status species are those species (plants, animals or fish) with populations that have declined to the point of substantial federal or state agency concern. Special status species include any species which is listed, or proposed for listing, as threatened or endangered by the U.S. Fish and Wildlife Service or National Marine Fisheries Service under the provisions of the Endangered Species Act; any species designated by the U.S. Fish and Wildlife Service as a "listed," "candidate," "sensitive" or "species of concern," those designated by each BLM state director as sensitive and any species which is listed by the State of Colorado in a category implying potential danger of extinction. BLM special status species are: (1) species listed or proposed for listing under the Endangered Species Act (ESA), and (2) species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA, which are designated as Bureau sensitive by the State Director(s). The sensitive species designation is normally used for species that occur on Bureau administered lands for which BLM has the capability to significantly affect the conservation status of the species through management.

Species discussed in this section have been listed by the USFWS, the State of Colorado, and/or placed on the Colorado BLM State Director's Sensitive Species List. Federal threatened and endangered species and designated critical habitat crucial to species viability are managed by the USFWS in cooperation with other federal agencies to support recovery. For listed species that have not had critical habitat identified and designated, BLM cooperates with the USFWS to determine and manage habitats to support the species. (Note: aquatic species are covered in the aquatic wildlife section, 2.4.6.)

Indicators

While each of the Public Land Health Standards ultimately benefits wildlife, plants, and habitats, Standard 4 specifically addresses special status wildlife and plant species and their habitats. This standard requires stabilizing and increasing the population of endemic and protected species in suitable habitats, and protecting suitable habitat for recovery. Other indicators include all those listed for healthy plant and animal communities under Standard 3 and riparian systems under Standard 2. LHAs employ both quantitative and qualitative methods for evaluating the Standards for wildlife and habitats.

Within the D-E NCA, the distribution of most of the special status plant species is known from Colorado Natural Heritage Program inventories completed in 2009 and 2010, project-related biological surveys, Land Health Assessment comments, and other information. Inventories have been completed by CNHP for the six special status plant species below.

Current Condition

Special Status Plants

The six special status plant species associated with the D-E NCA are the following:

- Colorado hookless cactus – Threatened listing under Endangered Species Act
- Grand Junction milkvetch -- BLM Sensitive Species
- Naturita milkvetch -- BLM Sensitive Species
- Eastwood's monkeyflower – BLM Sensitive Species
- Osterhout's cryptantha – BLM Sensitive Species
- Montrose bladderpod – BLM Sensitive Species

Colorado Hookless Cactus (Sclerocactus glaucus)

Habitat for the Colorado hookless cactus (formerly called Uinta Basin hookless cactus) includes rocky hills, mesa slopes, and alluvial benches in desert shrub communities at elevations from 4,500 to 6,000 feet. The Uinta Basin Recovery Plan estimated that 15,000 individual plants occur in the Gunnison River population. Recent surveys near Delta, Colorado, suggest total population size and distribution may be much larger than originally thought.

Grand Junction milkvetch (Astragalus linifolius)

Habitat for this milkvetch includes sparsely vegetated sites, often within the Chinle and Morrison formations and selenium-bearing soils, in Piñon-juniper and sagebrush communities at 4,800 to 6200 feet in elevation. Plants often occur on rocky slopes and in canyons. Based on current knowledge, the species is confined to the east side of the Uncompahgre Plateau. One occurrence along the west side of the plateau has been reported, but this is believed to be a misidentification of the species.

Naturita milkvetch (Astragalus naturitensis)

Habitat for the Naturita milkvetch includes the cracks and ledges of sandstone cliffs and flat bedrock areas with shallow soil development, within Piñon-juniper woodlands at elevations of 5,000 to 7,000 feet. This species occurs on mesas adjacent to the Dolores River and its tributaries in Montrose and San Miguel Counties, including portions of the BLM Dolores Field Office. Recent surveys have found additional populations in the Dominguez-Escalante NCA area in the GJFO, and the species appears to be more abundant than originally thought.

Eastwood monkey-flower (Mimulus eastwoodiae)

The Eastwood monkey-flower occurs exclusively in hanging gardens in the shallow alcoves or horizontal cracks of sandstone canyon walls at 4,700 to 5,800 feet in elevation. Several subpopulations occur in a series of seep alcoves along Escalante Canyon in Delta County (Dominguez-Escalante NCA). Several other locations occur just outside the UFO along the Dolores River.

Osterhout's cryptantha (Cryptantha osterhoutii)

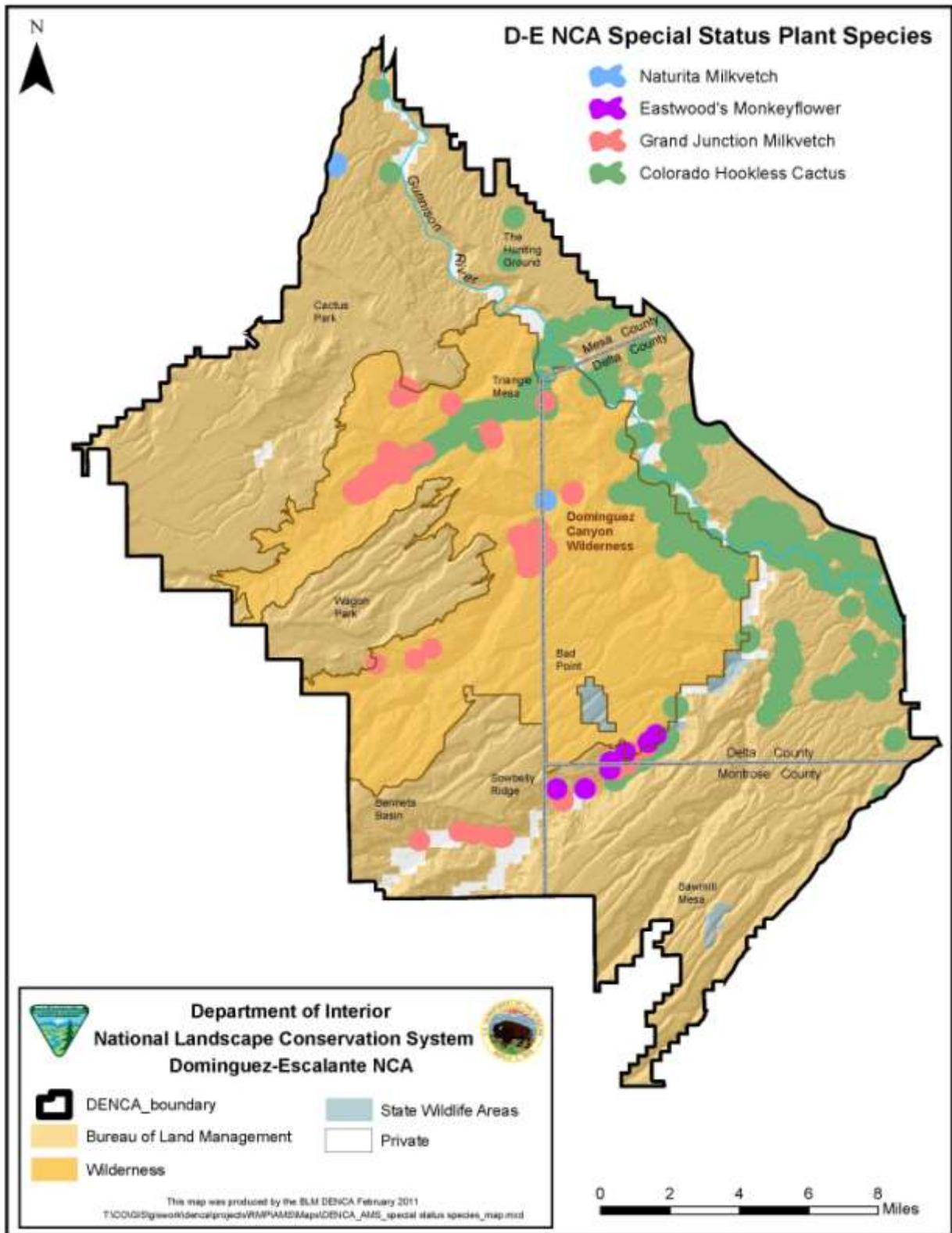
The Osterhout's cryptantha occurs in reddish-purple decomposed sandstone, in barren dry sites. Elevational ranges are 4,500 – 6,100 feet. In Colorado the species is limited to Mesa County, with the main populations centering on Rabbit Valley and Gateway. While the species has not been recorded within the NCA, suitable habitat is present.

Montrose bladderpod (Lesquerella vicina)

This bladderpod species occurs in sandy-gravel soil comprised mostly of sandstone fragments over Mancos Shale adobe soils, primarily in Piñon-juniper woodlands or Piñon-juniper and salt desert scrub mixed communities at 5,800 to 7,500 feet in elevation. The species occurs less often in sandy soils in sagebrush steppe communities. Distribution centers on the Uncompahgre River Valley in south Montrose County and north Ouray County, with most occurrences near the town of Montrose. However, outlying subpopulations persist near Escalante Canyon just south of the Delta County line, and north to the Peach Valley area in GGNCA in Montrose County.

See Map 2.4.5-1 Special Status Species Plants

MAP 2.4.5-1 SPECIAL STATUS SPECIES PLANTS



Forecast and Trends

Special Status Plants

Long-term trend data – which would tell whether populations are growing, shrinking or static -- is not available for any of the special status plant species. While the Denver Botanic Gardens has established Colorado hookless cactus monitoring plots within the NCA, the studies are too new to confidently observe true trends. This information should be available in five or more years, when adequate quantities of data have been collected and true trends can be distinguished from cyclic variation. There are two established Colorado hookless cactus monitoring studies along the Escalante Canyon, and three genetic-sampling sites within the NCA. Future plans may involve adding a cactus monitoring study on the GJFO side of the NCA, if population density supports a statistically valid study site.

Shorter-term inventory work completed by CNHP (2009, 2010) suggests that Colorado hookless cactus in the Hunting Ground area are decreasing in number, while those west of the Gunnison River appear to be static. All other special status plant species found within the NCA seem to be comparable to populations found outside of the NCA, with no apparent trend differences.

A wide range of current factors impact the six special status plant species -- primarily habitat degradation and weed invasion. While grazing (past and present) has contributed to the degraded habitat, so have drought, insects, and fire. Future impacts to the rare plants are anticipated to stem from an increase in public use of the area, and the need for associated infrastructure. Trailheads and trails, along with trail users (hikers, campers, OHV-riders and equestrian) are likely to contribute to habitat fragmentation, weed spread, and direct impacts (trampling) to the plants. (An example of anticipated impacts is the proposed Bridgeport trailhead and trail which creates a new trail in occupied Colorado hookless habitat. While direct impacts to the cactus have been avoided, indirect impacts are likely, as the new trail will route tens of thousands of people through a previously undisturbed area.

Special Status Fish and Wildlife

The forecast and trends for special status fish and wildlife species are discussed in their respective sections (2.4.6 and 2.4.7).

Current Management

Endangered Species Act

Section 7 of the ESA requires that BLM land managers ensure that any action authorized, funded, or carried out by the BLM is not likely to jeopardize the continued existence of any threatened or endangered species and that it avoids any appreciable reduction in the likelihood of recovery of affected species. Consultation with USFWS is required on any action proposed by the BLM or another federal agency that affects a listed species or results in jeopardy or modifications of critical habitat.

BLM Special Status Species Policy

The BLM's Special Status Species Policy outlined in BLM Manual 6840 is to conserve listed species and the ecosystems on which they depend and to ensure that actions authorized or carried out by BLM are consistent with the conservation needs of special status species and do not contribute to the need to list any of these species. The BLM's policy is intended to ensure the survival of those plants that are rare or

uncommon, either because they are restricted to specific uncommon habitat or because they may be in jeopardy due to human or other actions.

By BLM policy, species proposed for federal listing are to be managed with the same level of protection provided for threatened and endangered species. The policy for federal candidate species and BLM sensitive species is to ensure that no action that requires federal approval should contribute to the need to list a species as threatened or endangered. All Federal candidate species, proposed species, and delisted species in the five years following delisting will be conserved as Bureau sensitive species.

Land Health Standards

Both field offices adopted RMP amendments that established standards and indicators for special status, threatened, and endangered plant and animal species (both federal and state). While each of the Public Land Health Standards ultimately benefits wildlife, plants, and habitats, Standard 4 specifically addresses special status wildlife and plant species and their habitats. This standard requires stabilizing and increasing the population of endemic and protected species in suitable habitats, and protecting suitable habitat for recovery. Other indicators include all those listed for healthy plant and animal communities under Standard 3 and riparian systems under Standard 2. LHAs employ both quantitative and qualitative methods for evaluating the Standards for wildlife and habitats.

Grand Junction Resource Management Plan (1987)

Management Objectives

- To conserve plants and animals (and their habitats) listed by federal and Colorado governments as threatened and endangered species, and to conserve plants and animals that are candidates for these lists.
- To maintain at least the present populations of threatened and endangered species populations and their habitat and contribute to the overall objective of improving them so that they can eventually be removed from the threatened or endangered status lists.

Planned Management Actions

- Actively manage habitat locations listed in Table 2-2 to improve the habitat for unique, sensitive, and endangered plants and animals. In the remainder of the resource area, improve habitat of these species where opportunities exist through development of other resources.
- Protect the spineless hedgehog cactus, and Uinta Basin hookless cactus (now called the Colorado hookless cactus) sites by prohibiting surface disturbance year round.
- Threatened and endangered species and unique plant associations will be inventoried and monitored where necessary to provide information to determine proper management.
- Clearances will be conducted on all proposed surface-disturbing activities, and the FWS will be consulted as required.
- Measures designed to protect threatened and endangered species and their habitat will be required in all land use activity plans.
- Supplemental releases and reintroduction of federal and state listed endangered, threatened, and candidate species may be authorized following environmental analysis and consultation with the FWS, CDOW, and other affected parties.

Uncompahgre Basin Resource Management Plan (1989)

Management Objectives

Threatened and endangered species and unique plant associations will be inventoried and monitored where necessary to provide information to determine proper management.

Clearances will be conducted on all proposed surface-disturbing activities, and the FWS will be consulted as required.

Measures designed to protect threatened and endangered species and their habitat will be required in all land use activity plans.

Supplemental releases and reintroduction of federal and state listed endangered, threatened, and candidate species may be authorized following environmental analysis and consultation with the FWS, CDOW, and other affected parties.

Adequacy of Current Management

The majority of land health problems in the planning area are thought to be caused by an array of past and present land use activities. FLPMA's multiple-use philosophy sometimes produces conflicting values. Mitigation and restrictions for projects on public lands can often settle for short-term fixes that fail to remedy long-term, landscape-level problems such as habitat fragmentation and loss. Although necessary and beneficial, such measures are not as effective as proactive, enhancing, conservation efforts and planning. Nevertheless, current human activities and resource demands are expected to continue and likely increase.

Staffing, funding, and time limitations inhibit the ability to achieve objectives aimed at benefitting special status species. BLM biologists are tasked with evaluating and clearing nearly every project or action proposed on public lands. Between threatened and endangered species under the Endangered Species Act, plus species of concern or interest, 54 species and their habitats occur or may occur across the D-E NCA. Evaluating the impacts of multiple, concurrent projects, and effectively mitigating those impacts on resources, are a time-consuming and complex undertaking. In addition, such actions are subject to legislative provisions and rigorous procedure.

Standard 4 on Special Status Species requires the following: Special status, threatened and endangered species (federal and state), and other plants and animals officially designated by the BLM, and their habitats are maintained or enhanced by sustaining healthy, native plant and animal communities. Indicators such as species diversity and resiliency are used to gauge BLM success at achieving these standards. When BLM field offices have identified specific objectives (such as those based on recovery plans), long-term monitoring is often lacking, making it difficult to determine whether these standards are being achieved or whether the agency is making progress toward those goals.

Grand Junction Field Office

Numerous changes in federally listed species' designations and habitat have occurred since the 1987 Grand Junction RMP. In addition, new species have been identified as proposed for listing or as BLM sensitive. As a result, the RMP should reflect these changes, as well as the management needed to prevent adverse effects on listed or sensitive species or critical habitat that were not considered in the 1987 RMP. Big game management was the focal point of the 1987 RMP, and many special status species were not addressed.

Uncompahgre Field Office

The Uncompahgre Basin RMP (1987) specified different management approaches by management unit. Prescribing wildlife and habitat stipulations (and other management approaches) by management unit or geographic area is short-sighted and inflexible. The approach is based on commodity production and fails to consider biological and ecological constraints. As the distribution and legal status of species changes constantly, BLM should apply stipulations to protect species resource-wide, as necessary, and wherever conditions warrant.

Management Opportunities

Considerations in the D-ENCA RMP should include the following:

Changing and increasing land use demands (e.g., increased OHV use, population growth, increase in visitor numbers); and

Changes in laws, regulations, and BLM policies. (For example, the 1987 Grand Junction RMP did not address desirable vegetation conditions, invasive nonnative species management, riparian management, and threatened and endangered and sensitive species.)

Similar to vegetation management and fish and wildlife habitat management, management opportunities for the RMP could include identifying desired habitat conditions and population objectives for special status species and identifying priority species that require immediate intensive management. Once this is determined, actions and area-wide use restrictions needed to achieve desired population and habitat conditions could be identified.

Identify and define specific overarching objectives for special status species and their habitats. The D-ENCA RMP should clearly defined overarching goals (what we want to accomplish overall), objectives (how we get there) and decisions (specific actions we will take to accomplish our objectives).

Base management should be on an ecological, landscape-level approach and include an analysis and prescription for habitat cores (protected areas), graduated peripheries (variegated levels of restricted areas), and movement corridors to sustain biodiversity.

“Routine maintenance” for human developments (fences, communication sites, roads, etc.) is generally allowed for in the various permit types. Given the extent and number of human developments across public lands and, consequently, the continuous maintenance of these features, there can be negative impacts on wildlife, fish, and their habitats. To avoid potential conflicts with ESA, FLPMA, BLM policy, and other guidance, “routine maintenance” should be more rigorously defined and triggers for analysis and biological clearance should be considered. Standard stipulations for future maintenance should be considered.

Develop vegetation treatments such that habitat quality takes precedence over quantity or total area treated. If BLM staff are confident that high quality habitats will be achieved, and desired conditions will be achieved with minimal impact to a species, treatments may be extended to cover more area. Whenever possible, multiple species should be considered in the design of habitat treatments.

Prescribe road density objectives through travel management planning in areas of high ecological value (see below) or other sensitive areas.

Manage special status species in compliance with BLM Manual 6840 (Revised 2008).

New information and species status changes (such as federal listing) may warrant future designation of protected or special management areas (such as critical habitat and ACECs). Such decisions are acknowledged as a possibility and should be provided for in this RMP revision.

Surface disturbing activities will not occur within 200 meters of known federally protected or recognized plant populations, and 100 meters of known BLM sensitive plant populations. For smaller or less intensive construction (such as trail building and hand tool work) as determined by a BLM biologist, ground disturbing activities will not occur within 100 feet of known federally protected or recognized plant species, and 50 feet of known BLM sensitive species. These buffer standards may be modified (either contracted or expanded) according to site characteristics and concerns.

Plant survey results and clearances are generally valid for a period of three years. Conduct new surveys after a three-year period to determine whether any sensitive plants have become established in the interim within the affected area(s). Any expansion of facilities and roads outside of existing disturbances would require additional surveys and clearances.

Formulate other mitigation measures and design features for species to be incorporated into the revised RMP.

In coordination with CDOW, the Colorado Natural Heritage Program, Colorado Natural Areas Program, and other partners, the BLM UFO should identify potential ACEC or other special management areas to enhance protection and recognition of desert shrub and shrub steppe communities. Focus species would include special status and rare plants endemic to these areas (such as *Sclerocactus glaucus*). Areas of high ecological value—where management should focus most of its enhancement, maintenance, and/or protection efforts—include the following vegetation and habitat types:

- canyon and river systems
- desert shrubland and Mancos Shale (Adobe) badlands
- riparian and wetlands including seeps, springs and sagebrush communities.

2.4.6 Aquatic Wildlife and Wildlife Habitat

Current Condition and Indicators

Fisheries and Aquatic Wildlife Habitat

The DENCA planning area contains 107 miles of perennial streams. The primary perennial streams are Big Dominguez Creek, Cottonwood Creek, Dry Fork Escalante Creek, Escalante Creek, Gunnison River, Kelso Creek, Little Dominguez Creek, North Fork Escalante Creek, Rocky Pitch Gulch, and Rose Creek. Other aquatic habitats include small ephemeral ponds that fill primarily in response to summer rainstorm events and provide important seasonal breeding habitats for resident amphibian species. In addition to fish and amphibians, aquatic habitats provide important water resources for a variety of bats, birds, and other terrestrial wildlife.

Aquatic habitats within the planning area are generally in good condition. The one exception is the Gunnison River, where the riparian condition is challenged by larger than desired amounts of nonnative vegetation, including tamarisk, Canada thistle, houndstongue, and Russian olive. The smaller tributary

streams are relatively pristine as compared to many streams in western Colorado. They contain predominantly native vegetation that is diverse in composition and structure and is abundant and lush along the majority of stream segments. Invasive species exist in very limited amounts and include those same species as noted in the Gunnison River. Good streamside vegetative cover helps provide thermal regulation of stream temperatures, provide for terrestrial insect production (which is an important food source for fish, birds, and bats), and dissipation of flows which provides for stream bank stabilization.

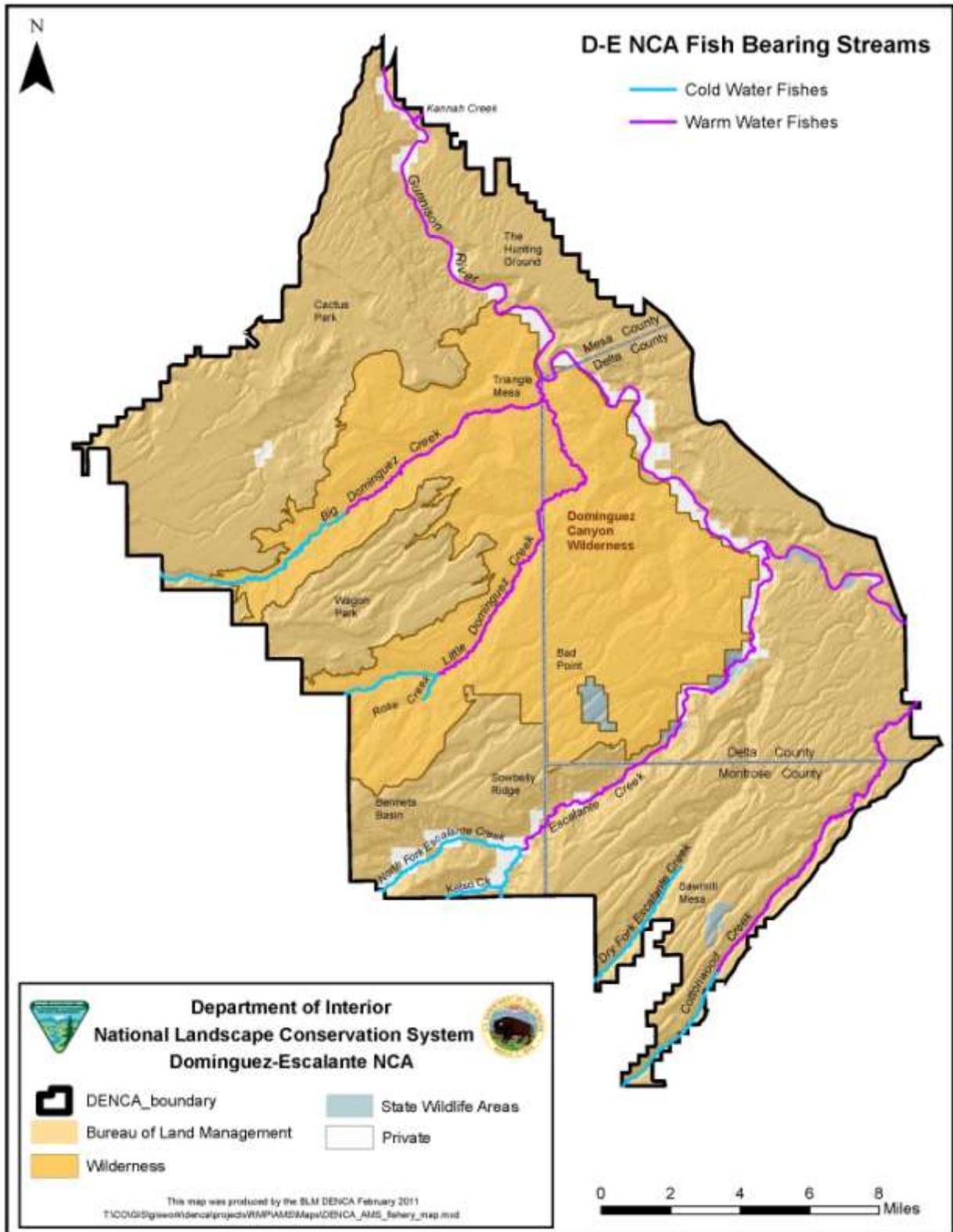
In-channel habitats are in good condition, and streams are largely in balance with the sediment loads and geological land form setting in which they reside. Good mixes of riffles, runs, and pools exist and provide habitat diversity and complexity for a diversity of aquatic species. Flows within the Gunnison River are heavily regulated due to the presence of upstream reservoirs. This reduces high peak flows within the planning area and limits the creation and maintenance of important microhabitats such as backwaters, side channels, and flooded bottomlands -- all important for native fishes. Flows within the smaller tributary streams are largely natural, but variable, based primarily on regional and local climatic conditions. Water is a finite resource in this largely arid landscape. Late summer/fall flows are a factor for year-round occupations by fish and other aquatic wildlife.

Water quality is good throughout the planning area, with no primary indicators identified as a concern. Water temperatures vary seasonally, but largely dictate where habitat changes from warm water native and non-native fishes in the lower elevation reaches, to cold water native and sport fish in the upper elevation reaches (see Map 2.4.6-1).

To avoid future ESA listings, BLM has signed a multi-state conservation agreement for flannelmouth sucker, bluehead sucker and roundtail chub.



MAP 2.4.6-I FISH BEARING STREAMS



Aquatic Wildlife

The Gunnison River was sampled in 2009 and 2010 through the length of the planning area. In addition, the majority of the perennial streams have been inventoried for fish in the past few years. This data will serve as good baseline information for species population trends. Select stream segments have been sampled for macroinvertebrates as well, which will help assess water quality and land-use management practices over time.

The planning area contains 115 miles of fish-bearing streams. There are more miles of fish-bearing stream than perennial stream, as the lower portion of Cottonwood Creek is identified as non-perennial. This segment of creek can go dry seasonally (fall), but it does flow most years -- which facilitates seasonal use of the creek by fish. Waters known to contain fish include Big Dominguez Creek, Cottonwood Creek, Escalante Creek, Gunnison River, Kelso Creek, Little Dominguez Creek, North Fork Escalante Creek, and Rose Creek. The planning area contains a diverse mix of predominantly native fishes and amphibians (Table 2.4.6-1).

The Gunnison River within the planning area contains 87 percent native fishes (by total number of fish) including federally endangered species, BLM sensitive species, and other native fishes. The Gunnison River is currently considered to be in good condition with regard to overall species composition. The tributary streams contain mixes of both native and non-native fishes. The lower portions of Escalante, Cottonwood, and Big Dominguez Creeks contain predominantly warm water native fishes and are in good condition. The middle reaches of Big and Little Dominguez Creeks contain only warm-water native fish and are in very good condition. The upper reaches of Big and Little Dominguez, and Escalante and North Fork Escalante, and Cottonwood and Kelso creeks contain some native and non-native recreational sport fish and are in poor/fair condition.

TABLE 2.4.6-1 POTENTIAL SENSITIVE SPECIES FOUND IN D-E NCA

Species	Value/Status/Rationale for Key Designation
Fish	
bluehead sucker <i>Catostomus discobolus</i>	State Species of Concern; BLM Sensitive Species
bonytail chub <i>Gila elegans</i>	Federal Endangered Species
cold water gamefish (rainbow trout, brown trout)	Recreational sport fish value
Colorado pikeminnow <i>Ptychocheilus lucius</i>	Federal Endangered Species; State Threatened Species
Colorado River cutthroat trout <i>Oncorhynchus clarki pleuriticus</i>	State Species of Concern; BLM Sensitive Species

roundtail chub <i>Gila robusta</i>	State Species of Concern; BLM Sensitive Species
flannelmouth sucker <i>Catostomus latipinnis</i>	State Species of Concern; BLM Sensitive Species
greenback cutthroat trout <i>Oncorhynchus clarki stomias</i>	Federally threatened species – proposed for re-introduction into select streams within the planning area
humpback chub <i>Gila cypha</i>	Federal Endangered Species
razorback sucker <i>Xyrauchen texanus</i>	Federal Endangered Species
speckled dace <i>Rhinichthys osculus</i>	Native minnow
Warmwater invasive species (carp, white sucker, fathead minnow, red shiner, bluegill, green sunfish, channel catfish and largemouth bass)	Non desirable species that compete or prey on native species
<i>Amphibians</i>	
boreal toad <i>Anaxyrus boreas</i>	Federal Candidate Species
Canyon treefrog <i>Hyla arenicolor</i>	State Species of Concern; BLM Sensitive Species
Great Basin spadefoot <i>Spea intermontana</i>	State Species of Concern; BLM Sensitive Species
New Mexico spadefoot <i>Spea multiplicata</i>	State Species of Concern
northern leopard frog <i>Rana pipiens</i>	State Species of Concern; BLM Sensitive Species

Planning for Priority Species and Vegetation (PPSV)

BLM staff identified a number of indicators to monitor the health of the D-E NCA’s aquatic systems. Because the health and management of the Gunnison River aquatic habitat is dependent on upstream impacts, indicators for the Gunnison River were developed separately from the tributaries within the NCA. For the Gunnison River, the current condition rating is generally poor (Table 2.4.6-2). The presence of the railroad and ripraps along the banks and the unnatural water flow of the Gunnison River prevent important fish habitat formation. In addition, the abundance of non-native plants poses problems for aquatic wildlife habitat.

TABLE 2.4.6-2 ATTRIBUTES FOR EVALUATING GUNNISON RIVER AQUATIC HEALTH

Attribute	Indicator	Data Source	Condition
Ability of Gunnison River to move	Percent Channelization and RipRap along banks	Internal analysis, USGS data and State water data.	Fair
Hydrologic regime/surface water in Gunnison River	Hydrograph	Internal analysis, USGS data and State water data.	Fair
Water chemistry	Water quality	Internal analysis, USGS data and State water data.	Fair
Presence/abundance of key functional groups	Percent native fishery composition	BLM fish surveys	Good
Species composition/dominance	Percent of miles with little to no invasive plant cover	BLM Greenline data	Poor

The current rating for tributaries of the Gunnison River is generally much better in the NCA. While state standards indicate water quality issues on some reaches within the NCA, this is not due to BLM management (See Section 2.3, Water Resources). The abundance of non-native fish in the coldwater reaches of the NCA would need to be addressed through the replacement of non-native trout with native cutthroat trout.

TABLE 2.4.6-3 ATTRIBUTES FOR EVALUATING TRIBUTARY AQUATIC HEALTH

Attribute	Indicator	Data Source	Condition
Connectivity among communities and ecosystems	Miles of streams available for native fish travelling out of Gunnison River to spawn	BLM fish surveys	Good
Water chemistry on segment 4A	State water quality standards	USGS data and State water quality data.	Fair
Water chemistry on segments 5 and 6	State water quality standards	USGS data and State water quality data.	Good
Presence/abundance of key functional groups	Percent native fish in coldwater reaches	BLM fish surveys	Poor
Presence/abundance of key functional groups	Percent native fish in warmwater reaches	BLM fish surveys	Good

Species composition/dominance Percent of miles with little to no invasive plant cover BLM Greenline data Very Good

Current Management

Fisheries and Aquatic Wildlife Habitat

At the state level for the BLM, current direction is to manage for native aquatic vegetation within the planning area. In areas where nonnative riparian vegetation exists, plans to control, reduce, eliminate, and monitor invasive species are underway. Where native vegetation exists, maintaining these areas in current condition is vital. To maintain stream habitats, water flow is critical. Instream flow rights have been secured within nearly all of the fish-bearing streams within the planning area, which helps to maintain and protect aquatic habitats (see section 2.3, Water Resources). Natural geology plays a significant role in the condition and maintenance of stream habitats. The majority of tributary streams are small, high-gradient systems and are limited due to natural barriers and seasonal water flow. Riparian inventories have been completed and project opportunities have been identified where restoration or removal of nonnative species would benefit streamside habitats.

In addition, the Uncompahgre Basin RMP (1989) provides the following aquatic habitat-related guidance:

- Riparian zones and aquatic habitats will be inventoried and monitored where necessary to provide information to determine proper management.
- Vegetation conditions and streambank cover will be maintained and improved.
- Measures designed to minimize site-specific riparian and aquatic deterioration will be required in site-specific plans for surface-disturbing land use activities.

The Grand Junction RMP (1987) provides the following guidance:

Management objectives:

- To maintain the existing riparian acreage and manage it for the greatest diversity in plant heights and for the species appropriate (native) to each site.
- To increase fish production on the producing aquatic areas and to improve the cool water fisheries potential on marginal streams.

Planned Management Actions:

- Actively manage the 22 streams (shown on Map 2.4.2-1) totaling 71 miles for sport fisheries.

Aquatic Species

Current direction is to manage for native aquatic species within the planning area. Where native species currently reside, maintaining high native species composition is the primary objective. Where nonnative species are present and/or dominant, replacement of these species with native species is an objective of current management as is eliminating the spread or increase of these species.

Additional guidance related to special status fish and amphibians can be found in Section 2.4.5, Special Status Species.

The Uncompahgre Basin RMP (1989) provides the following fish-related guidance:

- Supplemental releases and reintroduction of native or naturalized fish and wildlife species (excluding federal or state listed endangered, threatened, or candidate species) may be authorized by the Colorado Southwest district manager following environmental analysis.

The Grand Junction RMP (1987) does not provide any additional guidance beyond the guidance provided related to aquatic species habitat.

Management Opportunities

Fisheries and Aquatic Wildlife Habitat

Management opportunities related to aquatic habitat are covered in Section 2.3, Water Resources, and Section 2.4.3, Riparian.

Aquatic Species

Specific projects include reclamation efforts within Big Dominguez Creek and upper Little Dominguez Creek to replace non-native species with native, genetically pure cutthroat trout. This same effort could be considered in the other coldwater fisheries within the planning area, including the Escalante Creek watershed and Cottonwood Creek watershed. In the Gunnison River, the BLM could assist with non-native fish removal, which would maintain native species composition and reduce species competition for limited resources. This opportunity is long-term and requires close cooperation with other agencies. There is also an opportunity to improve fish passage for native warm water species in Escalante Creek, by redesigning diversion structures. This would require cooperation from the private owners of those structures.

Invertebrates

Numerous species of aquatic and terrestrial invertebrates occur across the NCA – insects, spiders, crayfish, worms, mussels, etc. This group has been largely unstudied and forms the base of the food chain for amphibians, reptiles, fish, birds and mammals. Of special note are the invasive aquatic invertebrates that have recently been detected in Colorado -- zebra and quagga mussels are currently being found in numerous bodies of water in Colorado. Zebra mussels are native to the Black Sea and Caspian Sea, though they have been documented in numerous locations in Europe and North America. Quagga mussels are native to the Ukraine and were first discovered in water bodies in the U.S. in 1989. Zebra and quagga smother aquatic organisms, such as crayfish and native clams and out-compete native species for food and aquatic habitat. They damage equipment by attaching to boat motors or hard surfaces and clog water treatment facilities. The zebra mussel has been found at Grand Lake, CO in the Colorado River drainage. The quagga has not been found on Colorado's Western Slope, though it has been found in Vernal, Utah.

2.4.7 Terrestrial Wildlife

Indicators

Data on terrestrial wildlife in the NCA is provided by BLM spatial (GIS) data, CDOW GIS data, and BLM Land Health Assessments (LHAs) (Table 2.4.7-1). Both the LHAs and GIS data maintained by CDOW provide information on vegetation and terrestrial wildlife distribution in the NCA. In addition, CDOW maintains statistics on big game harvests, recreational use days, and population trends.

TABLE 2.4.7-1 TYPES OF WILDLIFE DATA

Data Sources	Types of data
BLM GIS data	Habitat, vegetation, range, fire, transportation, realty, water, soil, geology, recreation, archeology, paleontology. Data for maps developed internally and from external sources: (USGS, NRCS, CDOW and USFWS).
CDOW GIS data	Fish and wildlife ranges, nesting and denning sites, calving grounds for ungulants
BLM Land Health Assessments (LHAs)	Utilizes BLM and CDOW data to determine land health assessments and identify thresholds between management categories

Resource Description

Within the NCA, the presence and interspersion of many habitat types support a large number of wildlife species. Terrestrial species use all of the vegetation types discussed in section 2.4.2, Native Vegetative Communities. Elk, mule deer, pronghorn, bighorn sheep, mountain lion, raptors, and many nongame species, including migratory birds, are among the species that utilize habitat in the NCA. The diversity and populations of fish and wildlife throughout the NCA provide considerable recreational opportunity and economic benefit.

The key terrestrial wildlife species are primarily herpetiles (reptiles and amphibians), birds, and mammals. Adequate populations of terrestrial invertebrates are assumed when populations of the vertebrate groups that prey on invertebrates are healthy.

The NCA has not had oil and gas development and is now withdrawn from mineral entry. In addition, historical uranium mining activity in the NCA was limited. For those reasons, historic and current impacts to wildlife from energy development are minimal. A good portion of the NCA is a designated wilderness and was a wilderness study area prior to designation. As a result, these areas have minimal human impacts, other than impacts from equestrian and pedestrian users. This lack of industrial disturbance presents a unique opportunity to preserve wildlife habitat into the future.

Generally, the higher elevation areas of the NCA seem to be in good condition with little habitat fragmentation and generally fewer invasive species (other than crested wheatgrass). Impacts from recreation and habitat fragmentation (high density of OHV trails) increase as elevation decreases. The most heavily impacted area is the Hunting Grounds region between Highway 50 and the Gunnison River.

Current Condition

Herpetiles (Reptiles and Amphibians)

The reptiles and amphibians of primary concern are those designated as BLM “sensitive” species. Population numbers of reptiles and amphibians are not known, although BLM conducted presence/absence surveys in 2008 and 2009.

Reptiles

The majority of reptiles occur in lower elevations and in dryer habitats such as sagebrush shrublands, greasewood flats, and piñon-juniper woodlands. Reptiles observed in the NCA include collared lizard, sagebrush lizard, tree lizard, side-blotched lizard, prairie plateau lizard, short-horned lizard, plateau striped whiptail, midget faded rattlesnake, desert striped whipsnake, bull/gopher snake, and western terrestrial garter snake. Because the primary focus of the surveys conducted by the BLM in 2008 and 2009 was on amphibians, it is notable that the only garter snake observed was the western terrestrial garter snake (no blacknecked or wandering garter snakes were observed).

The following reptiles occur or have the potential to occur in the NCA:

- longnose leopard lizard – BLM sensitive
- midget faded rattlesnake – BLM sensitive
- milk snake – BLM sensitive

Longnose leopard lizards are likely to occur in stands of greasewood and sagebrush with a large percentage of open ground. The species has not been recorded in the NCA but is likely to occur in the lower elevations of the NCA.

The midget faded rattlesnake has not been recorded in the NCA. Observations in the Grand Junction field office suggest the species is likely to occur in the NCA. The species is typically observed in or near rocky outcrops.

The milk snake has not been recorded in the NCA but has been recorded adjacent to the Gunnison and Colorado Rivers upstream and downstream of the NCA. The species utilizes a wide range of habitats and is likely to occur in the NCA.

Amphibians

Amphibians are associated with rivers, streams, ponds, and springs. CDOW and BLM surveys document the presence of canyon treefrog, bullfrog, red spotted toad, northern leopard frog, tiger salamander and woodhouse toad across the NCA planning area.

One federal candidate amphibian species and three Colorado state species of concern occur or have the potential to occur in the NCA:

- boreal toad – Federal candidate for listing
- canyon treefrog – State species of concern, BLM sensitive species
- Great Basin spadefoot – State species of concern, BLM sensitive species
- northern leopard frog – State species of concern, BLM sensitive species

The canyon treefrog is largely restricted to riparian areas in rocky canyons. It is typically found along streams among medium to large boulders, from desert to desert grassland and into oak-pine forests. It is found in rocky canyons throughout the NCA. The species is common in Escalante Canyon and in Big and Little Dominguez Canyons.

The Great Basin spadefoot occurs mainly in sagebrush flats, semi-desert shrublands, and piñon-juniper woodland. This species digs its own burrow in loose soil or uses those of small mammals, and it breeds in temporary or permanent water, including rain pools, pools in intermittent streams, and flooded areas along streams. The species has not been confirmed in the NCA.

The northern leopard frog generally inhabits permanent water with rooted aquatic vegetation. The species was observed along the Gunnison River within the NCA during surveys conducted in 2008.

Birds

The following birds with federal or state status occur, or have the potential to occur, in the NCA:

TABLE 2.4.7-2 SPECIAL STATUS BIRD SPECIES KNOWN TO INHABIT OR TO POTENTIALLY INHABIT D-E NCA

Species	Federal or State Status	In NCA?
Gunnison sage grouse	Federal candidate for listing, BLM sensitive species	P
Southwestern willow flycatcher	Federally endangered, BLM sensitive	?
Mexican spotted owl	Federally threatened	P
Western yellow-billed cuckoo	Federal candidate for listing, BLM sensitive species	P
Bald eagle	Bald and Golden Eagle Protection Act, BLM sensitive	X
Golden eagle	Bald and Golden Eagle Protection Act	X
American peregrine falcon	BLM sensitive	X

Northern goshawk	BLM sensitive	?
Ferruginous hawk	BLM sensitive	?
Burrowing owl	BLM sensitive	P
Columbian sharp-tailed grouse	BLM sensitive, state species of concern	?
Long-billed curlew	BLM sensitive, state species of concern	?
White-faced Ibis	BLM sensitive	?
American white pelican	BLM sensitive	P
Brewers sparrow	BLM sensitive	P
Black swift	BLM sensitive	P

X = Occur

P = Potential. Not documented, but suitable habitat is available within D-E NCA.

? = Lesser likelihood, to varying degrees.

These and other key bird species for which habitat is provided in the NCA can be separated into four groups: water birds, raptors, grouse and turkeys, and passerine bird species. Each of these groups is discussed below.

Water Birds

Important production areas extend along much of the Colorado and Gunnison Rivers, with brood concentration areas reflecting the location of important foraging areas. The majority of the areas used occur on private agricultural lands along the Gunnison River, not on NCA-managed lands. The key water bird species include great blue herons, geese, several species of ducks and sandhill cranes.

Great blue heron foraging and breeding areas are primarily along the Gunnison River. Individual herons visit small streams and stock ponds throughout the planning area.

Canada geese and other waterfowl species winter along the Gunnison River. Important foraging areas occur on private lands in agricultural areas within the river corridor -- both within and adjacent to the NCA. Sandhill cranes use areas within the NCA as a migratory stopover in the fall and spring.

Habitat for the western yellow-billed cuckoo occurs along the Gunnison River within the NCA. Yellow-billed cuckoos have not been recorded in the NCA. Rocky Mountain Bird Observatory has two sightings approx. 25 miles east and approx. 5 miles north of the NCA. However, the species is difficult to detect and may migrate through the area or remain in suitable cottonwood habitat within the NCA. Breeding of yellow-billed cuckoos in the area was confirmed along the North Fork of the Gunnison River.

Raptors

Raptors in the NCA include eagles, falcons, hawks, and owls. Because they are at the top of food chains and therefore are in fewer numbers than their prey, they serve as important indicators of overall ecosystem health. Data are maintained by CDOW on observations of most raptor species and several species are tracked individually. Of particular note with regard to BLM habitat management policies, are the concentrations of raptors (particularly bald eagles and peregrine falcons) along the Gunnison River.

Northern goshawk are not known to occur on the NCA, but breeding habitat occurs on National Forest Service lands adjacent to the NCA and foraging may occur within the NCA, especially during the winter. Breeding habitat in the NCA is generally marginal for this species.

Habitat for the ferruginous hawk occurs within the NCA at lower elevations. The species has not been observed in the NCA.

The western burrowing owl has the potential to occur in active prairie dog towns in the area. The Grand Junction Field Office contracted the Rocky Mountain Bird Observatory to conduct a burrowing owl study in the summer of 2008. No burrowing owls were noted within the NCA.

The Mexican spotted owl occurs in southwestern Colorado and has never been recorded within the NCA. While potential habitat for the species does occur in the NCA, the closest designated critical habitat for the species occurs approximately 30 miles southwest of the NCA boundary in the San Juan Mountains of Utah.

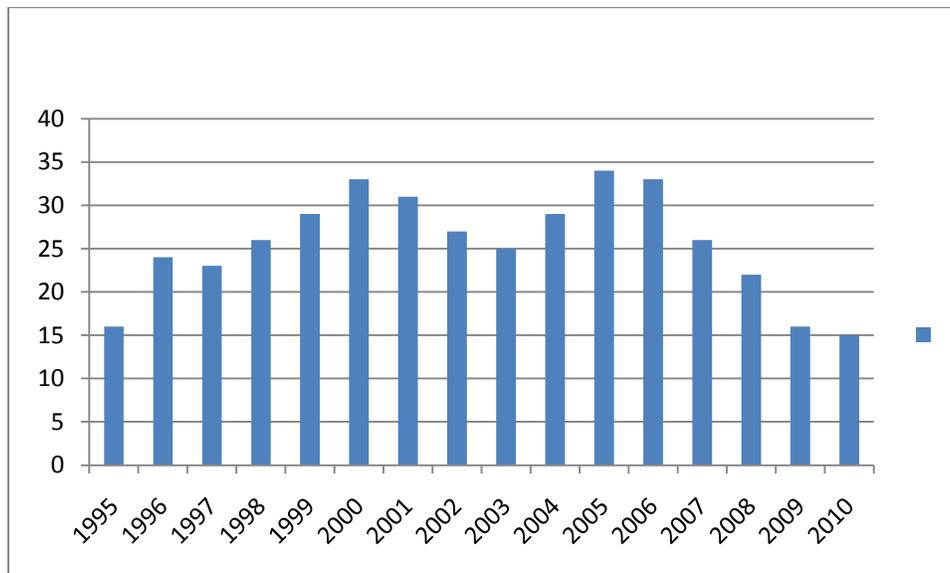
Grouse and Wild Turkeys

Blue grouse, wild turkey, and the Gunnison sage grouse (a BLM sensitive species discussed in more detail below) occur in the NCA. High elevation forested zones in the upper elevations of the planning area provide habitat for nesting blue grouse. Turkeys occur throughout the NCA, but are found primarily in higher elevation areas. Chucker and other introduced game birds occur at lower elevations in the NCA.

Columbian Sharp-tailed grouse do not currently occur in the NCA. Though portions of the NCA are mapped as historic habitat for the species, they are most commonly found in high elevation grassland areas interspersed with serviceberry, chokecherry, oak brush, sagebrush, snowberry, and aspen. This habitat type is not found within the NCA.

The Piñon Mesa population of Gunnison sage grouse occurs north of the NCA in the Glade Park area, near the northern end of the NCA. The Cactus Park area of the NCA is mapped as historic range for the Gunnison sage grouse. A conservation plan for this population was completed in 2000. The number of males attending leks during annual lek counts of the Piñon Mesa population has been declining since 2005 (Table 2.4.7-3). This population was augmented in 2010 with Gunnison sage grouse from the Gunnison Basin area. These birds were equipped with radio transmitters and data obtained from these birds suggests the Cactus Park area of the NCA is currently used as wintering habitat for the Piñon Mesa population of Gunnison sage grouse (pers. Com. Dan Neubaum Jan 2011).

**CHART 2.4.7-3 GUNNISON SAGE-GROUSE PIÑON MESA POPULATIONS
MALE ON LEK COUNT**



Other Important Bird Species

Various species of migratory birds summer or winter in the NCA, or migrate through the NCA. The habitat diversity provided by broad expanses of pinion juniper, sagebrush, and saltbush vegetation zones support numerous species of birds.

The Southwestern willow flycatchers range extends into southwestern Colorado and is not believed to include the NCA. The species has never been recorded in the NCA and the USFWS no longer lists the species as potentially occurring in Mesa or Delta Counties.

The Long-billed curlew typically breeds in short grass and mixed-grasslands, however breeding has also been recorded in croplands and desert grasslands northwest of Grand Junction. The species is not known to occur in the NCA, but potential habitat exists in the Hunting Grounds area.

Western Colorado, including the NCA, is considered migratory habitat for the White-faced ibis and American white pelican. Breeding of these species has not been recorded in the area.

Brewer’s sparrow is commonly associated with sagebrush parks and is likely to occur in sage habitat within the upper elevations of the NCA.

Black swifts nest within close proximity to falling water on a cliff. They place nests in small cavities within the spray zone or directly behind sheets of falling water. The NCA provides a limited amount of potential nesting habitat for the species in Big Dominguez and Escalante Creeks.

Big Game Species

The four primary big game species in the NCA are elk, mule deer, bighorn sheep and antelope.

Elk

The overall range of elk occupies the higher elevations of the NCA. Summer range is found on Forest Service lands on the Uncompahgre Plateau. Calf production occurs in concentrated areas on the Uncompahgre National Forest. Winter range includes the lower elevation slopes around the Uncompahgre Plateau including those in the NCA. No major migration corridors have been identified within the NCA.

Severe winter range is defined as that part of the winter range where 90 percent of the individuals are located when annual snowpack is at its maximum and/or temperatures are at a minimum in the two worst winters out of 10. Critical winter range is defined as the winter habitat that is used during the most extreme portion of the winter.

The NCA is within elk Data Analysis Unit (DAU) E-20 for the CDOW, and Game Management Unit (GMU) 62. These units are designated and surveyed by the CDOW and intended to encompass one herd's range throughout the year. The CDOW estimated 10,680 Elk DAU E-20 in 2009, which is above the target population of 8,500-9,500 elk.

Mule Deer

The overall range of mule deer includes the entire NCA. Summer range is found along the Uncompahgre Plateau, production occurs in concentrated areas within the summer range on the Uncompahgre Plateau. Winter range includes the majority of the lower elevation slopes around the Uncompahgre Plateau, including those within the NCA. The NCA is within mule deer DAU D-19 (Uncompahgre) for the CDOW, and GMU 62. These units are designated and surveyed by the CDOW and intended to encompass one herd's range throughout the year. The CDOW estimated 24,700 deer in DAU D-19 in 2009, which is below the objective population size of 36,000-38,000.

Bighorn Sheep

Desert bighorn sheep range throughout the NCA in the lower elevations. These sheep were released into the Big Dominguez Creek drainage in 1983 (10 sheep from Arizona), 1984 (10 sheep from Arizona), and 1985 (21 sheep from Nevada in two transplants). Additional sheep releases occurred in the Roubideau Creek drainage in 1991 (18 sheep from Arizona) and 1993 (20 sheep from Nevada). In 1995, 181 sheep were counted during the June helicopter survey. In the late 1990's, the population was estimated to be approximately 250 sheep. A *Pasteurella* pneumonia outbreak occurred in the population in 2001-2002. In 2001-2002 very few lambs were observed and the population appeared to decline dramatically. Only 27 sheep (five lambs/100 ewes) were observed during the 2002 helicopter survey. The population appeared to rebound in 2004 and 2005. In 2005, 100 sheep (69 lambs/100 ewes) were classified during the coordinated helicopter and ground surveys (Watkins, 2005). Currently, the population is estimated at 150 individuals.

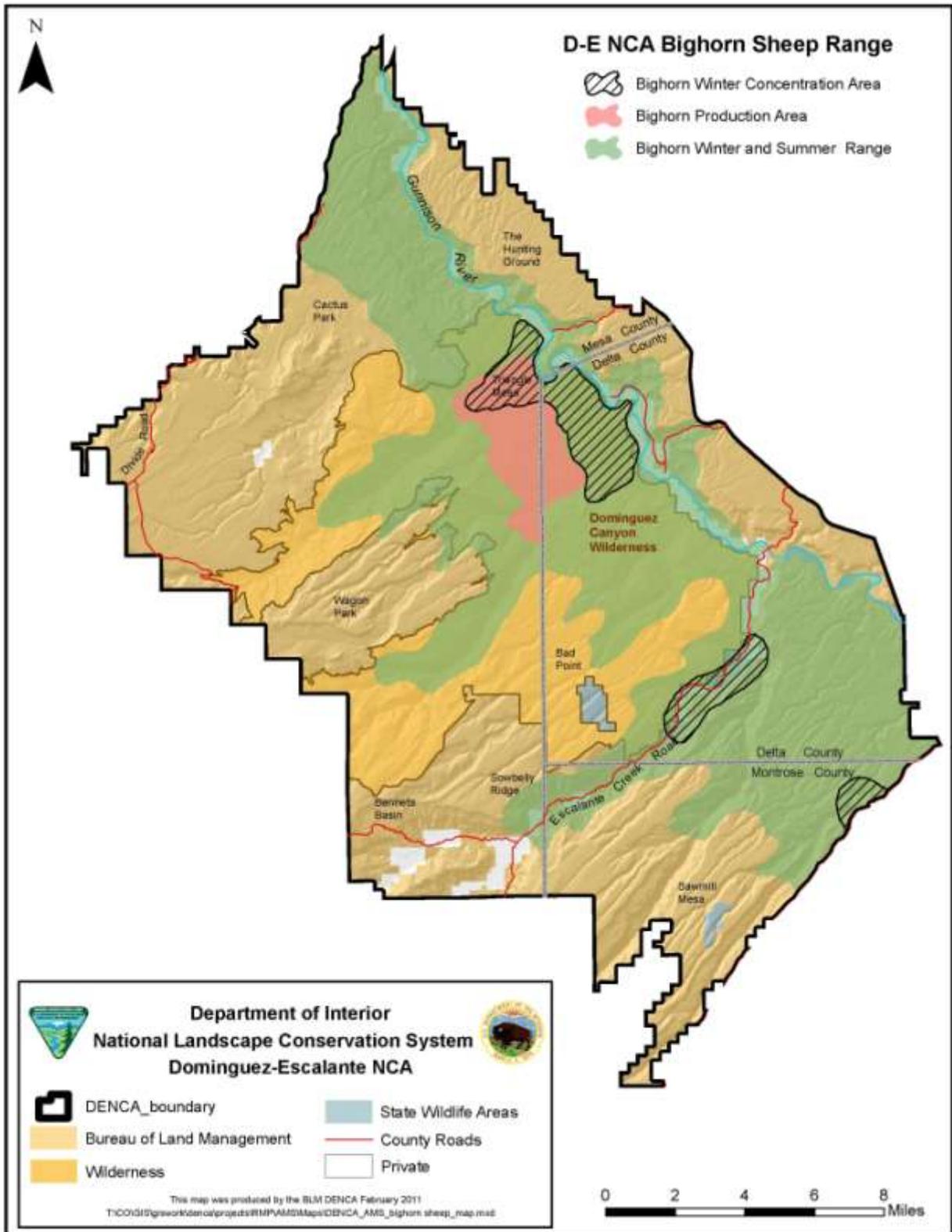
The presence of domestic sheep within known desert bighorn sheep range may have led to the precipitous population decline that occurred to the population in the early 2000s. A unique aspect of the wilderness area is the continued occupancy of a homestead that was ceded to the BLM. This property was ceded to the BLM under the agreement that the resident can live and run goats in Little Dominguez for the remainder of his life. This long-time resident of Little Dominquez Canyon has run a small flock of goats in the core area for the bighorn sheep, since before the bighorns were introduced. There is no doubt that there is interaction between the goats and the bighorns, and disease transmission from these goats to the bighorn sheep is a distinct possibility.

Pronghorn Antelope

Pronghorn antelope occur in the lower elevation desert areas of the NCA, primarily in the Hunting Grounds area. The NCA falls within DAU A-27 (Delta) for the pronghorn antelope. This DAU is bordered by US Highway 50 and the Uncompahgre Plateau and runs from Whitewater to Ridgeway. In 2009, the antelope population in this unit was roughly estimated at 150-175 individuals and expected to be declining due to poor habitat conditions. The objective population for the area is 350.



MAP 2.4.5-1 BIGHORN SHEEP WINTER RANGE



Other Mammals

The distributions of key mammal species and the locations they use within the NCA are documented by BLM LHA data, big game monitoring transects, and CDOW GIS data. The CDOW databases track population trends for selected species, as well. The most recent information is presented below for BLM sensitive species, big game species and other key mammal species.

Federally listed, state and BLM sensitive mammal species likely to occur within the NCA are:

- desert bighorn sheep – BLM sensitive species
- white-tailed prairie dog – BLM sensitive species
- kit fox – BLM sensitive species
- Allen’s (Mexican) big-eared bat – BLM sensitive species
- big free-tailed bat – BLM sensitive species
- spotted bat – BLM sensitive species
- Townsend’s big-eared bat – BLM sensitive species
- fringed myotis – BLM sensitive species

Two other species do not currently occur within the NCA, but the NCA contains either suitable habitat or could provide a corridor for dispersal. These species are:

- black-footed ferret – Federally endangered
- Canada lynx – Federally threatened

Additional species of management concern in the NCA are black bear and mountain lion -- both of which occur throughout the NCA. The NCA provides habitat for a number of other mammals of management and conservation concern, listed in the special status species section

BLM Sensitive Species

The black-footed ferret does not currently occur within the NCA and is unlikely to become established there without some reintroduction effort in the area. Populations have been established in the White River Field Office north of Grand Junction through introductions, but these animals are unlikely to move into the Dominguez-Escalante area on their own.

The Canada lynx has been recorded on USFS land on the Uncompahgre Plateau adjacent to the NCA. However, lynx are not believed to be established in the area. While the Forest Service lands adjacent to the NCA are likely to be used for dispersal and foraging, as the species range continues to expand, BLM lands within the NCA lands are unlikely to support lynx, and if used would only be for dispersal habitat.

White-tailed prairie dogs and the many species that are associated with this keystone species are present in the lower elevations of the NCA, primarily in the area known as the Hunting Grounds, between the Gunnison River and US Highway 50.

Kit fox currently inhabit areas north of the town of Delta and have the potential to inhabit the Hunting Grounds area, though the species has not been documented in the NCA.

Sensitive bat species are likely to utilize habitat throughout the area including snags, caves/crevasses and abandoned mines. Of the sensitive bat species, Townsend's big eared bats have been recorded along East Creek on the northern boundary of the NCA. Big free-tailed (Escalante Forks), Townsend's big-eared (Escalante Forks; Escalante Boat Launch Bridge), and fringed myotis (Escalante Forks) bats have been captured or detected acoustically (Hayes 2009). Additionally, western red bat may have been detected acoustically at Escalante Boat Launch Bridge, and Escalante Forks.

Trends

Wildlife Populations

A Data Analysis Unit is a geographic area that represents the year-round range of a big game herd, and includes all of the seasonal ranges of a specific herd. The D-E NCA falls within DAU 19 for deer and D20 for elk. Elk populations typically exceed, and deer populations typically fall short of, CDOW population targets for Data Analysis Units in the planning area. If management is effective, populations that exceed objectives are expected to become smaller and more in balance with available habitat, while those that fall below targeted levels are likely to increase.

Current trends for fish, amphibians, and other aquatic species are largely unknown. With the limited data available, it appears that most raptor populations are stable. Although data is lacking, other non-game populations, including furbearers, small mammals, and reptiles, are expected to be stable. Those wildlife species or populations thought to be at-risk or declining are monitored and tracked as special status species. Prairie dog, jack rabbit, and kit fox are suspected to have declined in the D-E NCA, based on CDoW surveys.

Declining Habitat

Wildlife diversity and abundance typically reflects the diversity, quality, and quantity of habitat. In general, habitats have declined over time. Possible causes include over-grazing (native and domestic ungulates), noxious weed infestations, and increased recreational use of public lands, leading to habitat fragmentation (Forman and others, 2003). The effects of habitat decline vary for each species. While problems (such as poor browse conditions for wintering big game) are present in some areas, most of the planning area appears to be meeting land health objectives. Still, sagebrush and salt desert habitats, in particular, have been reduced in area and quality in the planning area and other regions across the United States. These sites are at risk due to overgrazing, cheatgrass and other weed invasions, piñon-juniper conversions, and other factors. Wildlife that depend on these habitat types have declined in abundance and range.

Analysis of the long-term, systematic monitoring data for wildlife habitat conditions (such as with permanent transects) has not been carried out in most of the planning area. Currently, the best available information is derived from annual LHAs, range monitoring, big game transects and EIS work. The entire planning area has been assessed using the land health methodology. Portions of each

landscape were found to be meeting, meeting with problems, or failing to meet Land Health Standards. The following is a summary of the most common conditions observed in problem areas, along with the significance to wildlife and fish. The following lists some of the characteristics of the D-E NCA that are leading to declining habitat for wildlife.

1. Low cover by perennial cool season and warm season grasses and forbs

Cover by desirable native plant species is lower than expected for a particular site's ecological potential. This problem is most evident at drier, low-elevation sites in the planning area. Low-elevation sites also sustain heavier concentrations of grazing livestock and wildlife, which may further reduce palatable native grasses. On the plus side, healthy stands of native perennial grasses and forbs provide essential hiding and breeding cover and forage for a variety of wildlife species.

2. Low plant community diversity

Plant community diversity is lower than expected for a particular site's ecological potential. This problem is often observed in connection with other symptoms (such as weeds and overbrowsing). Typically, diverse plant communities or heterogeneous habitats are more resilient to disturbances and more productive, and provide habitat for a greater number of wildlife species and individuals than uniform or homogenous plant communities provide. Vegetation patches that vary in type, size, shapes, and juxtaposition across a landscape are typically desired so that multiple species benefit, but should not be so divided that it creates habitat fragmentation.

3. Low seral stage diversity

Seral stage refers to a specific period in the development, or succession, of the plant community. Seral stage influences structural and spatial diversity of plant assemblages. Typically, late seral stage diversity across a landscape (such as closed-canopy piñon-juniper) provides cover for big game and birds, although it can be valuable to interior-dwelling species.

4. Low vegetation age-class diversity

Some areas are dominated by an even-aged stand of vegetation (such as old age sagebrush or young piñon) and some sites may be so densely stocked that other vegetation cannot survive (such as lacking cover with understory grasses). Like plant community and seral stage diversity, a diverse age-class community or population is typically more resilient to environmental disturbances and provides habitat for a greater number of species than even-aged stands of vegetation. Age-class diversity also indicates that vegetation reproduction and/or recruitment is occurring, another indicator of land health. In some situations, uniform age class structure is just a seral stage, and occurs naturally.

5. Excessive weeds and/or threat of invasion

Weeds, including cheatgrass, other annuals, and noxious species, are at moderate to high levels in some areas and have invaded many undisturbed sites. In some cases, weed cover occurs at a level that poses an invasion risk, should a major disturbance (such as fire or drought) occur. In other areas, exotic annuals are prevalent enough to increase the fire frequency of sites, and transform them completely to annual grasslands. Exotic and noxious weeds often displace native vegetation, typically resulting in degraded or unsuitable habitat.

6. Piñon-juniper encroachment

In some areas, piñon-juniper communities are expanding beyond their perceived or known historical range or are increasing in canopy cover. Piñon-juniper encroachment, particularly into sagebrush, can

render habitat unsuitable or poor for some species (such as sage grouse) and may alter plant community productivity, particularly in the understory community.

7. Habitat fragmentation, degradation, and loss

Road expansion, increased activities on public lands, recreation, agriculture, and residential developments are increasing habitat fragmentation and degrading some habitats through the introduction of weeds. Disturbances may negatively impact one species and benefit another. Fragmentation increases the amount of edge habitat and reduces interior habitat, favoring species which tend to be more common and reducing those which are typically more infrequent.

8. Degraded or unsuitable habitat due to past vegetation treatments

Some past vegetation treatments have resulted in poor or unsuitable habitat for wildlife. In the planning area, the most common example is the conversion of sagebrush communities to crested wheatgrass stands. Crested wheatgrass plantings create a monoculture that typically results in poor habitat structure and diversity for wildlife (with some exceptions such as big game) and contributes to declines in sagebrush obligate populations. In addition, cheatgrass, annuals, and/or noxious weeds have invaded a number of treatment areas. However, when done properly, sagebrush thinning can promote herbaceous production and forbs cover. Some treatment areas in the DENCA are recovering well and have apparently resulted in improved conditions for many wildlife species.

9. Overbrowsed shrubs and trees

Abnormal growth form, hedging, poor leader growth, high or conspicuous browse-line heights, and similar problems indicate overuse by wildlife and/or livestock. This problem is most evident where big game and livestock use overlap. Wild ungulates in particular have the ability to cause dramatic shifts in vegetation, which can impact birds, small mammals, and other wildlife. This may indicate an imbalance between big game numbers, livestock stocking rates, and animal distribution, and the capacity of a habitat to support these population levels.

10. Poor vigor of shrubs

Decadent plants, dead plants, poor leader growth, and marginal seed production are observed in some areas. These problems are often observed in association with heavy browsing damage by grazing animals. The health and persistence of native shrubs (sage, mountain mahogany and service berry) is critical to provide essential cover, food, and structural diversity for multiple wildlife species.

11. Loss and/or degradation of crucial habitats

Impacts from developments, weeds, recreation, and similar activities may result in short or long-term loss or degradation of crucial habitats, such as big game severe winter range and production areas.

12. Landscape and habitat connectivity problems

Roads, fences, trails, rangeland conversions, and other human developments may impede or prevent animal movement and migration. Fragmentation of habitat may also inhibit animal movement.

13. Declining wildlife populations

Wildlife populations (such as migratory birds, amphibians, bats) may be declining.

14. Overabundance or unwanted growth of wildlife populations

Some wildlife species are exceeding habitat carrying capacity and may be contributing to site degradation. Overpopulation may be inferred from both habitat condition and utilization indices (such as overbrowsing or hedging of shrubs, scat, and weed proliferation) and harvest/ population data collected by the CDOW. Additionally, some wildlife species, like red fox and raccoon, are associated with human activities, and have increased as development has increased on private lands. This can cause declines in other species, such as ground-nesting birds.

15. Poor water quality, channelized streams, and poor or weedy riparian vegetation

Riparian habitat is crucial to the survival of species in arid environments. In addition, the condition of fish habitat is intrinsically linked to the condition of adjacent riparian habitat and stream channel characteristics. Among other benefits, riparian vegetation moderates water temperatures, prevents stream bank erosion, and provides cover for fish. Amphibian and aquatic invertebrate species richness and diversity are strongly correlated with water quality and hydrologic conditions.

Forecast

With improved management and time, areas currently not meeting standards are expected to improve. However, some degraded areas, such as those dominated by cheatgrass or other weeds, may continue in their present condition, or become worse. These vegetation changes will in turn affect the composition and size of wildlife communities. The effects of habitat decline vary for each species. The population and habitat of more common wildlife species are expected to remain relatively stable, while some generalist species may increase. Small or rare species and habitats are at higher risk for declines. As demand for resources increases with the growing human population, these trends are likely to continue into the future.

Potential Negative Impacts

Uses such as livestock grazing, water use, realty actions, and recreation may also have negative impacts. Streams could potentially be affected by agricultural and recreational activities, resulting in increased sedimentation and adverse changes in water quality, quantity and aquatic habitat. To some extent, trends such as drought and disease are a result of natural factors, which may be beyond the control of management.

Current Management

Resource Management Plans

The Uncompahgre Basin RMP (1989) provides the following guidance related to terrestrial wildlife:

- Wildlife forage allocations will remain at current levels until studies determine adjustments are needed to achieve management directives. Additional forage allocations will be divided equally between wildlife and livestock grazing.
- Wildlife habitat monitoring studies will be established and/or maintained on all crucial winter ranges.
- The planning area will be open to land treatments [for wildlife] and project facility development. Existing wildlife facilities and land treatments will be maintained.

The Grand Junction Resource Management Plan (1987) provides the following guidance:

Management Objectives

- To provide sufficient forage, cover, and protection from disturbance to maintain a population of 15,500 deer and 870 elk in summer and 34,400 deer and 2,950 elk in winter.
- To maintain the existing species in the resource area and to improve the habitat of each species of game and nongame primarily, according to the species' susceptibility to BLM influence and secondarily to the evidence of human demand.
- To maintain the existing riparian acreage and manage it for the greatest diversity in plant heights and for the species appropriate (native) to each site.

Planned Management Actions

- Manage deer habitat to allow deer to increase to 15,500 in summer and 34,400 in winter.
- Manage elk habitat to allow elk to increase to 870 in summer and 2,950 in winter.
- Actively manage key species.
- Protect the habitat of bighorn sheep, deer, and elk by prohibiting disturbing activities in these areas during certain times of the year. Protect elk calving sites, riparian areas by prohibiting surface disturbance in these areas year round.

RMP Amendments

Both RMPs also were amended for compliance with guidance related to land health. These amendments established standards and criteria for healthy plant and animal communities, healthy riparian communities, and healthy aquatic resources.

In addition, the first sentence of the wildlife management objective for the Grand Junction RMP was modified to read "To provide sufficient forage, cover, and protection from disturbance to maintain a population of 15,500 deer and 870 elk in summer and 34,400 deer and 2,950 elk in winter, *commensurate with public land health standards.*" This change assured consistency with the recently adopted land health standards.

The Uncompahgre Basin RMP had the following wildlife-related amendments:

- Improve the UFO's ability to use fire as a management tool to enhance deer and elk habitat, especially winter range and other crucial habitats.
- Acquire lands to improve and benefit public lands and resources.
- Reduce OHV-related impacts on terrestrial and aquatic wildlife and habitats

Habitat Improvement Projects

Within the NCA, both the Grand Junction and Uncompahgre Basin Field Offices have conducted some vegetation treatments (generally using a tool called a roller-chopper). These treatments contained either a primary or secondary wildlife habitat objective. Other objectives included livestock forage

improvements, fuel reduction and improvements to vegetation diversity. Many of these treatments were done in areas that had been previously chained and re-seeded with non-native crested wheatgrass in order to increase livestock forage production in the 1960's.

Other wildlife-related projects include cottonwood plantings along the Gunnison River.

Special Status Species Guidance

See section 2.4.5, Special Status Species.

Adequacy of Current Management

The absence of major developments within the D-E NCA, as well as the area's remote nature, has prevented significant impacts to wildlife. Regardless, current management continues to have detrimental impacts to wildlife.

Some primary impacts to wildlife habitat from BLM management that should be addressed are:

- Residual impacts from historic uses
- Old vegetation treatments or woodcuts
- Roads and road maintenance
- Fire suppression
- Livestock overgrazing
- Wildlife use, including excessive browsing by deer, elk, rabbits, and prairie dogs
- Wildland/urban/agricultural interface and associated activities; isolated BLM parcels
- Recreation, including hiking, equestrian, mountain biking and off-highway vehicle (OHV) activity
- Livestock ponds
- Water diversions, flow regulations, and augmented flows

Other potential causes for land health problems include:

- Drought or climate change
- Lack of keystone predators to control prey (including elk and deer) populations

Management Opportunities

BLM management can pursue a number of opportunities, including:

- Avoiding the potential for interaction between domestic sheep/goats and desert bighorn sheep by managing BLM grazing permits in compliance with Western Association of Fish and Wildlife Agencies (WAFWA) recommendations. This includes removal of domestic goats from the Dominguez Canyon Wilderness when the current occupant of the Little Dominguez Creek cabin vacates the property.
- Continue to treat sagebrush parks for encroaching piñon-juniper and crested wheatgrass.
- Treat cheatgrass and other invasive species in the salt desert shrub community, to improve habitat conditions.
- Address nonnative aquatics, such as bullfrogs and crayfish (and nonnative mollusks if they are detected), to improve habitat for native aquatic species.
- Continue invasive plant species treatment in riparian areas (tamarisk, Russian olive etc.).
- Reduce habitat fragmentation through planned recreation management across habitat types.
- Manage for appropriate distribution of age classes of habitat types across the landscape.

2.4.8 Fire and fuels

Current Condition and Indicators

Fire Occurrence

Table 2.4.8-1 shows the fire occurrence within D-E NCA over the past 19 years for fires on BLM lands within both the GJFO and UCFO. The majority of the fires in the D-E NCA remained small (i.e. less than 10 acres), which are represented by fires listed in the A and B size classes. Around 10 percent of the fires were larger than 10 acres (size classes C-G). The largest were grass fires, which occurred in the valley floor and were influenced by the influx of cheatgrass. Cheatgrass is a non-native, invasive grass that contributes to increased fire occurrence and severity. The vast majority of these fires were caused by lightning.

TABLE 2.4.8-1: FIRE OCCURRENCE (SIZE AND ACREAGE), 1980 TO 2009

Size Class	A	B	C	D	E	F	G
Number of fires	84	23	6	-	-	-	-
Number of acres	10	41	156	-	-	-	-

Data calculated for the D-E NCA on January 12, 2011 using WFMI (Wildland Fire Management Information) Fire Occurrence Data

Natural Fire Regime

Table 2.4.8-2 shows Fire Regime Groups from LANDFIRE data for BLM lands in the NCA. A natural fire regime is a general classification of the role fire would play across a landscape in the absence of modern human mechanical intervention, but including the influence of aboriginal burning. The five natural (historical) fire regimes are classified based on average number of years between fires (fire frequency) combined with the severity (amount of replacement) of the fire on the dominant over-story vegetation. Satellite data is used for classifying lands within these fire regime groups and within the 3 fire regime condition classes (FRCCs) that are described below. While satellite data may not be the most accurate, it does show trends and is consistent across field offices. Professional judgment in interpreting this dataset suggests that this data is over-estimating the number of acres in the Fire Regimes III and IV. The number of acres in Fire Regime V is probably a higher percentage than below.

This judgment is based on recent studies in the Gibbler area of the NCA that suggest that the historical fire return interval in piñon-juniper woodlands is near 200-300 years, and would therefore put much of the NCA into fire regime class V. This helps explain why occurrence of large fires in the NCA is relatively infrequent.

TABLE 2.4.8-2: FIRE REGIMES WITHIN THE RMP PLANNING AREA
(calculated only on BLM lands within the D-E NCA boundary)

Fire Regime Groups	Acres	Percent
I (0-35 year frequency and low to mixed severity-surface fires most common)	2,131	1 %
II (0-35 year frequency and high severity-stand replacement fires)	224	0.1%
III (35-200+ year frequency and mixed severity)	112,999	54 %
IV (35-200+ year frequency and high severity-stand replacement fires)	43,320	21 %
V (200+ year frequency and any severity-stand replacement fires)	42,762	20 %
Unclassified (water, barren, and alpine/tundra)	7,852	4 %

Source: Info using Landfire National Data

Fire Regime Condition Class

The Fire Regime Condition Classification System (below) measures the extent to which vegetation *departs* from reference conditions (or how the current vegetation differs from a particular reference condition). Departures from reference condition could be a result of changes to key ecosystem components such as vegetation characteristics, fuel composition, fire frequency, fire severity and pattern, as well as other associated disturbances, such as insects and disease mortality. The classification system is used to categorize existing ecosystem conditions and to determine priority areas for treatment as mandated by national direction.

TABLE 2.4.8-3: CONDITION CLASS DEFINITIONS AND ACREAGES

Condition Class	Fire Regime Example Management Options
<p>Condition Class 1 Acres: 38,528 19 percent of D-E NCA</p>	<p>Fire regimes are within a historical range, and the risk of losing key ecosystem components is low. Vegetation attributes (species composition and structure) are intact and functioning within a historical range. Where appropriate, these areas can be maintained within the historical fire regime by treatments such as fire use.</p>
<p>Condition Class 2 Acres: 149,216 71 percent of D-E NCA</p>	<p>Fire regimes have been moderately altered from their historical range. The risk of losing key ecosystem components is moderate. Fire frequencies have departed from historical frequencies by one or more return intervals (either increased or decreased). This results in moderate changes to one or more of the following: fire size, intensity and severity, and landscape patterns. Vegetation attributes have been moderately</p>

altered from their historical range. Where appropriate, these areas may need moderate levels of restoration treatments, such as fire use and hand or mechanical treatments, to be restored to the historical fire regime.

Condition Class 3

Acres: 15,454

7 percent of D-E NCA

Fire regimes have been significantly altered from their historical range. The risk of losing key ecosystem components is high. Fire frequencies have departed from historical frequencies by multiple return intervals. This results in dramatic changes to one or more of the following: fire size, intensity, severity, and landscape patterns. Vegetation attributes have been significantly altered from their historical range. Where appropriate, these areas may need high levels of restoration treatments, such as hand or mechanical treatments, before fire can be used to restore the historical fire regime.

Unclassified 6,090 acres – 3%

Professional judgment also suggests that the Fire Regime Condition Class information above is *under-predicting* the amount of the NCA that is in Condition Class 1. Much of the piñon /juniper woodlands in the NCA, which is the area's most common vegetative community, are likely in Condition Class 1. These woodlands often have naturally long fire return intervals (i.e. infrequent fires) that have not been significantly altered by humans. Sagebush shrublands, Ponderosa pine , and mountain shrub vegetative communities in the NCA may be currently in Condition Classes 2 and 3. Areas in the salt desert shrub where cheatgrass has created a more frequent, higher intensity fire regime would also be defined as Condition Class 3. Also, tamarisk-infested riparian areas would fall into Condition Class 3. Both of these non-native species increase the amount of fuels in the landscape and thus reduce the fire return interval for the lands in which they are found.

Wildland Urban Interface (WUI)

WUI is defined as those areas in which undeveloped wildlands meet or intermix with human development, ranging from communities and subdivisions to isolated structures and infrastructure (such as communication sites and powerlines). WUI is an issue throughout much of the planning area. These areas present a management challenge, not just from a fire perspective, but also with regard to wildlife habitat, travel management, recreation, watersheds, and exotic species. Continuing collaboration with the Colorado State Forest Service, county and community leaders, industry representatives, and homeowners associations is essential in order to mitigate some of these issues, particularly regarding fuels management and fire suppression. Over the past eight years, numerous fuel management projects involving extensive acreage within the planning area have been designed and implemented in WUI areas. The Unawep Canyon corridor is the most prominent example of a WUI on the borders of the NCA.

2.4.8-4 WILDLAND/URBAN INTERFACE, (SQURE MILES, 2000)

	Delta County, CO	Mesa County, CO	Montrose County, CO	Dominguez- Escalante NCA region	West
Total WUI Area	21	72	40	133	23,640
WUI Area with Homes	2	2	1	5	3,290
WUI Area without Homes	19	70	39	128	20,350

Percent of Total

WUI Area with Homes	7.8%	3.2%	2.6%	3.8%	13.9%
WUI Area without Homes	92.2%	96.8%	97.4%	96.2%	86.1%

Source: *Headwaters Economics*

Trends and Forecast

Wildland fires will continue to ignite and burn in and around the NCA, and increased frequency and severity of these fires is forecasted due to a multitude of factors. Fire suppression costs will also increase as fires become larger and more intense due to changes in fuels. As recreation and other human uses increase in the D-E NCA as a result of its designation, so does the potential of human-caused wildfire.

Wildland Urban Interface

Within the Uncompahgre and Grand Junction field offices, the amount of area classified as WUI has increased dramatically over the past two decades. Many large pieces of private land adjacent to BLM lands have been subdivided, while smaller acreages within larger pieces of contiguous BLM land are also being developed. Development has slowed due to the current large-scale economic downturn, but this slowdown is expected to be temporary, and subdividing of large blocks of private land is expected to continue into the near future.

Within the area of the NCA, WUI expansion has occurred primarily along Highway 141 (Unaweep Canyon) and in the town of Whitewater. With increased WUI in the NCA, the need for fuel reduction projects will likely increase. This could have a major impact on the funding requirements for fire/fuels in the NCA. In turn, this could impact the ability of fire to play a natural role in the NCA. Mesa and Montrose counties rank high in state-wide potential risk.

TABLE 2.4.8-5 WUI RISK ANALYSIS

	Delta County, CO	Mesa County, CO	Montrose County, CO
State-Wide Rank by Existing Risk	32 of 63	28 of 63	34 of 63
State-Wide Rank by Potential Risk	30 of 63	6 of 63	13 of 63
State-Wide Rank by Existing Risk	49%	56%	46%
State-Wide Rank by Potential Risk	52%	90%	79%

Source: *Headwaters Economics*

Changes to Plant Communities

Changes in vegetation, especially the increase in the number of acres dominated by cheatgrass, are causing fire to burn a larger number of acres and are increasing the severity and frequency of these fires. The presence of cheatgrass is also affecting the ability of effective rehabilitation efforts post fire. The affect of cheatgrass on fire is especially prevalent in lower elevation desert ecosystems. Other short-return fire regimes like sagebrush and ponderosa pine are trending away from their historic fire regime due to an increase in fuels and age class caused by fire suppression. Many sage flats are being encroached upon by piñon-juniper, which could alter the fire regime of this vegetative community.

Climate Change

Climate change is a difficult issue to quantify. Research indicates that changes are occurring (Global Climate Change Impacts in the US, 2009) and fire management seems to be readily impacted by minor changes in climate, both in the frequency, intensity, and size of fires but also in the type of vegetative recovery in burned areas. It is important to maintain resilience and redundancy across the landscape, as:

- fires are managed,
- naturally ignited wildland fires are used to accomplish resource management objectives, and
- prescribed burns and mechanical treatments are planned and implemented.

The latest global and local research and recommendations should be read and understood to better understand the management of natural resources in a changing climate.

Air Quality

Another trend is that smoke from planned and unplanned ignitions is beginning to be more and more of an issue, as development expands downwind of the NCA. Wildfires and prescribed fire will receive greater public scrutiny due to impacts from smoke. Thus, fewer and smaller controlled burns might be the norm in the future, and/or mechanical vegetation treatments may replace the use of prescribed fire.

Management Direction

The D-E NCA is split between two fire management organizations. The northern portion of the NCA is within the West Zone of the Upper Colorado River Interagency Fire Management Unit (UCR). The

southern portion of the NCA is within the Ouray Zone of the Montrose Interagency Fire Management Unit (MIFMU).

Thus, there are two separate Fire Management Plans (FMP) currently providing guidance for fire management decisions in the D-E NCA.

Projects

Several fuels projects have occurred on the north end of the NCA since 2001. These include treatments along Unawep Canyon to reduce potential for wildfire to spread from BLM lands to WUI on adjacent private lands. These treatments also have secondary objectives that may include improving wildlife habitat, range, and watershed conditions. Treatments adjacent to the WUI included hand-thinned fuels breaks, and mechanical treatments. A roller chopper was used on the mechanical portion of the Unawep WUI project.

Additional fuels treatments to reduce areas of hazardous fuel accumulations were completed within Gibbler Gulch. Roller chopping was done in several areas to reduce large fire potential in mixed mountain brush (oak, serviceberry, mahogany) and PJ woodland vegetative communities. These roller chops included the Gibbler project, Gibbler 2 project and the Farmer Canyon project. Most of these roller chop operations occurred between 2001-2006 and were located in areas that were chained in the 1960's by the BLM to increase livestock forage production.

The Gibbler Ponderosa pine restoration project is 319 acres. It utilizes hand-thinning with chainsaws, followed by piling and pile burning of the slash. This project is ongoing -- about half of the units have been completed. These treatments are designed to reduce intensity of future fires, to limit mortality of ponderosa pine.

Adequacy of Current Management Direction

Fire management plans and the FMP supporting documents allow for natural caused wildfires to be managed for resource benefit in some areas of D-E NCA. Depending on resource management objectives additional areas could be designated to allow wildfires to maintain ecosystems. This would reduce the amount of project money needed to meet the same objectives. The best opportunity to manage wildfires for resource benefit will continue to be within the wilderness.

Projects funded by the fuels program will continue to focus on protecting the WUI. Some of these projects may visually conflict with objectives established in D-E legislation. There is relatively small amount of WUI in this area compared to other parts of both FO's.

As more recreation occurs within the NCA, BLM may need to increase fire prevention efforts – education and law enforcement -- to prevent human-started fires.

Management Opportunities

The response to wildfires should support the goals and objectives for vegetation, wildlife and other resources. The top priority should always be public and firefighter safety.

Vegetation treatments and prescribed fire both could be important tools to restore vegetative communities and their natural structure (thus treating hazardous fuel accumulations). This could include follow-up treatments on areas chained in the 1960's.

Other treatments could target:

- Restoring riparian habitats by reducing fuels loads associated with tamarisk infestations.
- Maintaining sagebrush ecosystems by treating piñon/juniper invasion into the sage.
- Restoring and protecting Ponderosa pine stands from future wildfires, including through the use of low intensity prescribed burns.
- Create diversity in seral stages by returning and maintaining area to an early seral stage.
- Reducing visual marking from past activities within the NCA, such as the firewood harvest area in upper Gibbler Gulch

2.5 Cultural – Archeology and History

When D-E NCA was designated on March 30, 2009 the astounding cultural, historical and archeological resources of the area were specifically listed as purposes for the area’s designation as an NCA. Cultural resources are an integral part of our nation’s heritage, and represent a fundamental part of our local history in western Colorado. By teaching us the stories of our past, these resources help explain the development of our communities as they exist today.

Cultural resources are fragile and irreplaceable. They are subject not only to natural forces of change like erosion, wildfire, and decay, but also to the effect of increasing and varied demands placed on them. Such demands include public educational and recreation purposes or scientific and experimental uses, as well as unique traditional cultural or religious uses. Cultural resources can also be destroyed or removed illegally. Such activities remove a portion of our history and decrease the information about our past that can be passed on to future generations.

What are cultural resources?

Cultural resources are concrete, material places, and things. As defined by the BLM (BLM-M-8110), the term “cultural resource” can refer to archaeological and architectural sites, structures, or places with important public and scientific uses. Cultural resources may also include definite locations (i.e., sites or places) of traditional cultural or religious importance to specified social and/or cultural groups (see Glossary: Traditional Cultural Property). The term *archaeological resources* refers to any material remains of human life or activities that are at least 100 years of age (and may be of archaeological interest, as further defined at 43 CFR 7.3.).

The NCA has been occupied, with varying intensity, for almost 10,000 years. Cultural resources include prehistoric and historic archaeological and architectural resources, as well as Native American traditional cultural and religious properties. Prehistoric properties include stone tool (lithic) and chip scatters, quarries, temporary camps for seasonal hunting and gathering, extended camps, wickiup villages, hunting/kill/butchering sites, game processing areas, tree scaffolds, eagle traps, vision quest sites, rock shelters and caves, rock art panels, trails, and isolated finds. Historic properties (after 1860) include homesteads, trails and roads, railroads, irrigation ditches, reservoirs, mining sites, corrals, line camps, cabins, trash scatters and dumps, aspen art carvings (arborglyphs), and isolated finds.

How does the BLM identify and inventory cultural and heritage resources?

Site-level Data

Section 106 of the National Historic Preservation Act (NHPA) requires the continued identification of cultural resources. Cultural resources are concrete, material places and things that are located, classified, ranked, and managed through the system of identifying, protecting, and utilizing for public benefit. Cultural resources are identified through field inventories (i.e., surveys), historical documentation, or oral evidence. Most cultural resource inventories done by the BLM are done in areas of proposed ground disturbance, in support of other BLM resources and resource uses. These inventories take into account both the direct and secondary effects of the proposed projects on cultural resources. Cultural sites discovered during inventory are evaluated for eligibility to be listed on the NRHP and protected through site avoidance where possible.

Since 1976, Class II (statistical based sample) and III (systematic intensive) cultural resource inventories for both research and compliance for ground-disturbing projects have been completed on public and private lands within the D-E NCA planning area. During these surveys, cultural sites have been recorded and evaluated in the field for eligibility to be listed on the National Register of Historic Places (NRHP). As projects are authorized, consultation with SHPO makes those NRHP determinations official. Surveys conducted in the NCA for land exchanges, rights-of-way, recreational developments, grazing projects, and research has resulted in an ever-increasing database of inventory reports and cultural resource records.



FIGURE 2.5-I NATIONAL REGISTER EVALUATION CRITERIA

National Register Evaluation Criteria

The criteria applied to evaluate properties (other than areas of the National Park System and National Historic Landmarks) for the National Register are listed below. These criteria are worded in a manner to provide for a wide diversity of resources. The following criteria shall be used in evaluating properties for nomination to the National Register, by the National Park Service (NPS) in reviewing nominations, and for evaluating National Register eligibility of properties.

Guidance in applying the criteria is further discussed in the “How To” publications, Standards and Guidelines sheets, and opinions of the Keeper of the National Register. Such materials are available upon request from the National Register of Historic Places Publications

Criteria for evaluation. The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and

(a) that are associated with events that have made a significant contribution to the broad patterns of our history; or

(b) that are associated with the lives of persons significant in our past; or

(c) that embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

(d) that have yielded, or may be likely to yield, information important in prehistory or history.

Criteria considerations. Ordinarily cemeteries, birthplaces, or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years shall not be considered eligible for the National Register. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:

(a) A religious property deriving primary significance from architectural or artistic distinction or historical importance; or

(b) A building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or

(c) A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life.

(d) A cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or

(e) A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or

(f) A property primarily commemorative in intent, if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or

(g) A property achieving significance within the past 50 years if it is of exceptional importance. [This exception is described further in NPS's "How To" booklet No. 2, entitled "How to Evaluate and Nominate Potential National Register Properties that Have Achieved Significance Within the Last 50 Years," available from NPS.]

Cultural Overview Data

In addition to site-level inventorying, broad overviews of area-wide cultural resources are called Class I inventories. The most recent class I inventory of the cultural resources on the Grand Junction Field Office (GJFO) side of the D-E NCA is the Class I overview completed by Brian O'Neil in 1993, *The Archaeology of the Grand Junction Resource Area: Crossroads to the Colorado Plateau and the Southern Rocky Mountains*. The data for the GJFO Class I analysis in 1993 was based upon records current through June 30, 1989, with the exception of radiocarbon dates which included projects through 1992. Many of the early archaeological surveys were not conducted or reported to current standards. As a result, there was great variability in the reports and the site forms used.

The most recent Class I inventory on the Uncompahgre Field Office (UFO) side of the NCA was completed by Rand Greubel of Alpine Archaeological Consultants (Greubel et al 2010): *Class I Cultural Resource Overview of the Bureau of Land Management's Uncompahgre Field Office, Western Colorado*. Data for the 2010 Class I analysis was based on records current through May 2010 in the UFO database, and on records current through January 2010 on COMPASS -- an on-line cultural resource database established by the Colorado Office of Archaeology and Historic Preservation.

The completion of a D-E NCA specific Class I analysis would join cultural resource information on both the Grand Junction Field Office and the Uncompahgre Field Office sides of the D-E NCA. Such analysis would provide increased understanding of the resources of the area for better management and fill in a significant data gap for the D-E NCA RMP.

Site Monitoring

Resource conditions are assessed by field observation, cultural resource inventories, and project review. The key questions are whether there is a loss of those characteristics that may qualify the property for listing on the National Register of Historic Places (NRHP) or would diminish the cultural value of areas important to Native American or other traditional communities.

These characteristics can be affected by physical destruction, damage, or alteration of the resource; isolation of the resource; alteration of setting; neglect resulting in deterioration and destruction; or the transfer, sale, or lease of the resource. Specific indicators include the extent or intensity of natural weathering, erosion, wildfire, ground disturbance, grazing, recreation use, unauthorized collection, intrusions to setting, and vandalism. This loss affects the completeness and accuracy of the scientific information that can be derived from a resource. It also affects the aesthetic, historic, or interpretive value of the resource, and/or the importance of the resource in maintaining social and cultural traditions.

Both BLM cultural program staff and volunteers periodically monitor and document at-risk and potentially at-risk cultural sites for degradation. They look at natural processes (erosion and fire) and

erosion impacts exacerbated by human activities. Potentially damaging activities include construction, maintenance, livestock grazing, OHV use, recreation, wildlife impacts, fluid and locatable mineral exploration and development, mineral material sales, and habitat restoration/ fuel reduction. Since any BLM initiated or authorized action strives to protect cultural resources, the only human activity that could damage these resources is *unplanned* use.

Unplanned use includes unauthorized recreational vehicle use, unauthorized trail construction, deliberate theft by illegal collection or excavation, vandalism, or the use of cultural sites that results in damage (fires, occupation of historic structures, New Age ceremonial features, etc.). The location of these activities is impossible to predict and may occur in spite of measures designed to eliminate or limit them. A more formal monitoring program (the Site Steward Program) is directed at the several cultural areas and at sites that have significant values within the D-E NCA. Sites with physical barriers and signs are also monitored annually for maintenance and repair of these facilities.

Data Classification

Through scientific study of cultural resources, the story of adaptation and technological change can be told. Archaeologists simplify the description of prehistory by naming time periods that roughly correspond to cultural attributes or traditions manifested as artifact assemblages and features. Five broad time periods from earliest evidence to recent history, include the Paleoindian, Archaic, Formative, Aboriginal Protohistoric/Historic, and Historic. These time periods are used to record human behavior in the area. These periods make generalizations about both behavior and technology. Table 2.5-2 shows the percentage of currently known sites within the NCA that fall into the cultural time periods of the area. In the case of multi-component sites (sites with two or more cultures represented), each component was counted separately.

TABLE 2.5-2 CULTURAL TIME PERIODS REPRESENTED IN D-E NCA

Cultural Time Period	Time frame	Known Sites	Significance and Research Potential
Paleoindian	Before 6400 B.C.	<1%	<i>Paleoindian sites are scarce and there are data gaps in the archaeological record. These sites have significant scientific value for environmental information and to study a potential indigenous tradition in the planning area. Information on physical site development and mapping areas where intact soils remain from this period is important to identifying and preserving these sites. (n=6)</i>
Archaic	6400 B.C– A.D. 0	8%	<i>Some archaeologists favor subdividing the Archaic era into four periods. Excavation at sites from the Archaic era needs to be conducted on a larger scale, to collect not only dates and subsistence information, but to identify habitation structures and settlement patterns. The cultural transition to the next described era is poorly understood. The high effectiveness of the hunting and gathering lifestyle, given the abundant resources of the planning area, makes this an important research subject.(n=58)</i>
Formative	A.D. 0– A.D. 1350	6%	<i>The idea of a separate tradition is a recent proposal. The larger cultural dynamics that led to other Formative cultural groups -- only represented in the site record as intermittent forays -- needs more scientific study. The distinction of those groups that continued a hunting and gathering lifestyle throughout the late Formative, from the arriving Numic speakers, is another area that needs to be explored. (n=43)</i>
Aboriginal Protohistoric / Historic	A.D. 1350– A.D. 1880	7%	<i>These sites are important for their research potential , as well as to provide an important heritage connection to the RMPPA for the Ute who traditionally occupied the area.(n=48)</i>
Historic	After ca. 1860	12%	<i>Historical sites have the potential to provide additional insight. They often provide a new perspective on the development of the modern community and the diversity of the people who contributed to it as we experience it today.(n=86)</i>

Unknown Native American	n/a	65%	<i>The majority of prehistoric sites(n=475) have either not been recorded with enough detail to estimate a time period, or have had temporally diagnostic items removed from the site illegally. Many of these sites have dateable features. Even limited testing could contribute significant information on the distribution of prehistoric sites.</i>
Culture Unknown	n/a	2%	<i>These sites cannot be attributed to either the Historic or a Native American affiliation. Typically, these are enigmatic stone features or thermal features suggesting a hearth. Without excavation, nothing can be determined.(n=13)</i>

1 Numbers reflect the percent of sites with adequate information to assign the site to a defined time period.

Current Condition of Cultural Resources

Prior to designation, development patterns within the D-E NCA were different than the surrounding field offices. Projects within the D-E NCA were primarily range improvement projects -- including water development and fire and mechanical treatments for increased forage. The geology of the area precluded development of oil and gas in the area currently known as the D-E NCA. Additionally, 73,888 acres were designated the Dominguez Canyon Wilderness Study Area in 1980. This wilderness study area prevented certain types of development that can negatively impact cultural resources.

These past management decisions created a unique environment that preserved and protected cultural resources. National Conservation Areas such as the D-E NCA are designed to conserve, protect and enhance and manage public lands and the cultural, archaeological and historical resources on them for present and future generations.

Within the D-E NCA, the condition of cultural resources varies considerably, due to the diversity of terrain, geomorphology, access, visibility, and past and current land use patterns. Cultural sites discovered during inventory are evaluated for eligibility to be listed on the NRHP and protected through site avoidance, where possible. If avoidance is not possible, testing for NRHP site eligibility and mitigation of impacts through data recovery in the forms of archaeological testing or excavation may be necessary. Consultation with the Colorado State Historic Preservation Office (SHPO) is completed through the Section 106 process.

Avoidance of direct impact does not mean preservation.

Many sites continue to degrade.

Based on a data set current to December 2010, over 1,388 sites and isolated finds had been recorded in the D-E NCA and approximately 18 percent (37,721 acres of the D-E NCA total of 209,610) of the planning area has been surveyed. The data is biased, because the majority of surveys occurred in areas of range and fuels reduction projects. This figure for area surveyed included all cultural resources regardless of surface ownership, and thus may include inholdings, or lands managed by other agencies within the NCA. Currently, figures for surveys conducted and sites only on the lands managed by the BLM are not available.

Additionally, a majority of the early D-E NCA surveys are not to current standards established by both the Office of Archaeology and Historic Preservation and BLM. Only about seven percent of the D-E NCA has been surveyed to current standards. Information databases have been improved for the archiving of cultural resource data. In addition to paper records, the Office of Archaeology and Historic Preservation (OAHP), the UFO, and the GJFO have created spatial databases (GIS) to manage this information. Large block surveys since 2000 (for hazardous fuels reduction projects via the National Fire Plan) have added geographical balance to the data set, and have been a major contributor to the survey and site database.

Native American Involvement:

In 2007, the BLM initiated the Ute Ethnohistory Project -- an early scoping with Native Americans for the three RMPs (the GJFO, UFO and D-E NCA's). Scoping presentations were made directly to the three Ute Councils (Southern Ute Indian Tribe, Ute Mountain Ute Indian Tribe and Northern Ute Indian Tribe). This project actively involved Ute Cultural Resource staff and traditional leaders in the identification of issues and concerns.

To date, one of the major issues emerging from the Ethnohistory Project is the conservation of "heritage landscapes" -- large areas that embody not only physical cultural sites, but natural environmental conditions that have remained relatively unaffected by change over the last century. These landscapes could be used by Ute tribal members for field workshops and resource gathering areas. Information learned from the Ute Ethnohistory Project will continue to inform the D-E NCA planning process and encourage better consultation with Native Americans who may have an interest in lands managed by the D-E NCA. As sensitive heritage areas are identified, or become known through the Native American notification or consultation process, their concerns will be addressed through planning. The D-E NCA is legislated to protect and preserve Native American cultural and sacred sites and Native American access to these sites. This is only possible by better communication between the agency and the tribes, and by understanding the resources BLM is responsible for protecting. The D-E NCA will take no action that would adversely affect these areas or location without consulting the appropriate Native American tribes.

Consultation with the Ute tribes, as well as the archaeological and historic record, has established that the D-E NCA is part of their ancestral homeland. Traditional cultural properties and sacred sites may yet be discovered.

Many Ute tribal members have never been on the public lands in the D-E NCA region, and are only familiar with the general area as they travel through. At present, no locations have been identified as sacred/religious sites by the Ute tribes. Other known cultural resources that are affiliated to the Ute -- such as rock art, wickiup camps, trails, eagle traps, and battle locations -- are known to be of interest to the Ute. It is anticipated that our understanding of cultural resources as heritage sites important to the Ute, will change. Programs have been developed to work with students, adults, and elders to re-connect them to their traditional lands and resources.



Trends and Forecasts

As described above, most cultural program work is completed from a compliance-driven process that accounts for direct and indirect impacts from identified projects. Yet such work fails to address the wider impacts on sites from natural disturbances, such as wind and water erosion, intrusion by animals, development and maintenance activities, as well as human intrusion, including theft and vandalism. Limited site patrol and stabilization completed by the D-E NCA cultural staff and volunteers protect and preserve only a few well-known cultural sites. An understanding of the D-E NCA RMPPA's cultural resources is based only on where disturbance or proposed projects have previously occurred, rather than where sites are likely to occur. Because recorded sites are based on the discovery of exposed artifacts, features, and/or structures, they are easily disturbed by natural elements such as wind and water erosion, natural deterioration and decay, animal and human intrusion, and development and maintenance activities.

The conditions of the historic and prehistoric resources within the D-E NCA and the region are generally declining. The information contained therein is slowly being degraded and forever lost. Cultural resources are vulnerable to natural and human-caused impacts, because of their inherent nonrenewable status, and overwhelming numbers of visitors and recreationists. Additionally, there is a lack of federal funding and private partners to anticipate and execute research work. This will accelerate due to the increasing population, and the promotion of the area for recreation and the development of trails and facilities.

Current Management

The BLM has specific responsibilities and authorities to consider, plan for, protect, and enhance historic properties and other cultural properties which may be affected by its actions. The BLM operates under the National Environmental Policy Act, the National Historic Preservation Act of 1966 (NHPA), the Archaeological Resources Protection Act, the Native American Graves Protection and Repatriation Act, the Historic Sites Act of 1935, the Antiquities Act, the American Indian Religious Freedom Act, the Religious Freedom Restoration Act, Executive Order 13007 ("Sacred Sites") and other related authorities. Current BLM planning and decision making for the D-E NCA is guided by the Grand Junction Resource Management Plan (1987) and the Uncompahgre Basin Resource Management Plan (1989).

Management direction from the Uncompahgre Resource Management Plan (UFO RMP) directs the BLM to:

- Conduct clearances for cultural resources for all surface disturbing activities throughout the planning area as required by law.
- Design management units that will have measures designed to protect cultural sites incorporated into all activity plans.

Additionally, management direction from the Grand Junction Resource Management Plan (GJFO RMP) directs the BLM:

Objectives

- To comply with cultural resource laws.
- To review and assess extant site data for values, protection and preservation needs.
- To identify areas of significance for future inventory, designate high value areas for special management action based upon criteria outlined in the resource protection planning process reports and cultural resource management guide for the resource area.

Planned Actions

- To actively manage the sites identified in Table 14 of the GJFO RMP.
- To protect and preserve the remaining high value sites as prescribed by law and policy or as opportunities and situations arise.

"Cactus Park is the only area inside D-E NCA mentioned in table 14 of the GJFO RMP. This designation in Cactus Park was accompanied by a No Surface Occupancy Stipulation (Appendix D of the GJFO Record of Decision 1987). This stipulation mandated Cactus Park be managed to protect cultural resources which can be waived or reduced in scope if circumstances change, or if the lessee can demonstrate that operations can be conducted without causing unacceptable impacts on the resource identified." – GJFO RMP

Post-RMP Guidance

BLM management objectives encourage responsible use of cultural resources, ensuring that they will be available for appropriate uses by present and future generations. BLM is required to:

- Identify and evaluate cultural resources,
- Set priorities to protect and preserve examples of significant cultural resources and
- Administer them accordingly.

This applies to both public lands and other lands where BLM decisions could affect cultural resources in accordance with existing laws, regulations, and guidelines.

The existing field office RMPs were completed prior to passage of a number of laws. There have since been additions and changes in BLM program policy. As a result, the existing RMPs do not always have specific resource management goals and actions that address more current laws and directives. The following is an example of some important legal and procedural guidance that needs to be considered because they are not represented by objectives or management actions in the existing RMP:

Native American consultation

The 1987 GJFO RMP and the 1989 UFO RMP do not contain any specific decision guidance relating to Native American issues or concerns. There was no documented Native American consultation for the 1987 or the 1989 RMPs. Native American consultation did not begin until 1998 with the UFO and 2001 with the GJFO. This was done on both a programmatic and project-specific basis to identify any traditional cultural properties, sacred/religious sites or special use areas through letters, phone calls, and on-site visits. Field site visits were conducted to share the results of compliance projects where sites that are affiliated to the Ute Tribes are recorded.

Existing Projects in the Dominguez-Escalante NCA

Interpretation

The GJFO cultural program has provided interpretation at several trailheads and has other locations in various stages of interpretive development. This has happened in partnership with the Museum of Western Colorado and with funding support from Colorado Historical Society grants.

Partnerships/Collaboration Practices

The GJFO portions of the D-E NCA have had an active partnership program with Dominquez Archaeological Research Group (DARG), and the Colorado Historical Society to conduct research projects. Tribal partnership projects include the Ute Ethnobotany Project with the Ute Indian Tribe (Northern Ute), US Forest Service, Mesa State College, CSU Agricultural Extension Service, and Museum of Western Colorado. The Ute Ethnobotany Project brings Ute students and elders out to reconnect with their ancestral homeland and learn more about the native use of plants for medicine, food, shelter, clothing and more. The UFO portion of the D-E NCA has active partnerships in place with the Colorado Archaeological Society (CAS) Chipeta Chapter and with Western Wyoming College to conduct surveys and implement site testing and monitoring of individual cultural properties.

Site Steward Program

Both the GJFO and UFO portions of the D-E NCA utilize volunteers to formally monitor at-risk cultural resources, such as rock-art sites, located in sensitive portions of the D-E NCA. Site stewards assist the BLM archaeologists monitor for changes (both natural and human caused) at archaeological sites. Occasionally, they join the BLM archaeologists in research surveys to learn more about the cultural resources present on our public lands.



Planned Projects in the Dominguez-Escalante NCA

Ute Trails Project

This project is an extension of the Ute Ethnohistory Project and will include a cultural resource inventory in the Dominguez Escalante National Conservation Area. The need to identify Ute trails was a management recommendation resulting from Native American consultation contracted by the BLM and conducted by DARG in 2009.

The Ute tribes historically occupied the D-E NCA. The Ethnohistory Project brought Ute cultural department staff and traditional leaders from the three tribes together to share information on heritage resources and identify sites that are important to them. Trails were identified as a type of archaeological site that are important to the Ute Tribes.

Tribal consultants stated that it is not just for the agencies to identify these sites, but to bring Ute youth and other tribal members to these places to visit and build a better understanding of this aspect of their heritage and their place in Colorado. Cultural resource inventory surveys are the first step in identification of Ute trails in the D-E NCA.

Gunnison River Corridor Interpretive Project

This project is designed to promote heritage tourism and to make the history and prehistory of the area more accessible to the public. The river corridor interpretive project is designed to provide interpretive materials and identify trails to members of the public. It has initially focused on recreational groups using the river itself. Many of the important rock art sites along the river are accessible only from the river. Sites along the river corridor within the D-E NCA, which have been identified for interpretive work during this project include the Escalante Bridge site, Leonards Basin and Palmer Gulch rock art complexes, and history, prehistory and rock art in Dominguez Canyon and Bridgeport.

Adequacy of Current Management

BLM management objectives encourage responsible use of cultural resources ensuring that they will be available for appropriate uses by present and future generations. The cultural program supports the other BLM renewable and nonrenewable resource programs by completing cultural inventories in areas of proposed ground disturbance, and taking into account both the direct and secondary effects of the proposed projects. The effectiveness of this management is limited by lack of funding, for both proactive program projects and site-impact mitigation.

Surface-disturbing activities that result from authorized actions, such as mineral development, range improvements, and recreation site development are considered potential direct threats to cultural resources, but because of the cost of mitigation, sites are protected by avoidance. The Omnibus Act withdrew the D-E NCA from mining and drilling, thus reducing the threat of surface-disturbing activities in the D-E NCA. This leaves the sites vulnerable to indirect effects such as natural deterioration, incidental damage, and vandalism.

Issues in the D-E NCA:

- Many archaeological sites were first recorded over twenty years ago, often with inadequate documentation and evaluation. The management issues for these sites pertain to the quality of the data. Factors to consider range from the fact that some of these sites no longer exist, to cases where the properties are more significant than originally reported due to new findings in archaeology. None of the sites have been allocated to use categories. This condition of the database impedes efficient management and processing of applications.
- In 1990 the passage of the Native American Graves and Repatriation Act (NAGPRA) brought new responsibilities to both federal land managers and to repositories that curate materials collected from public lands.
- Recreation projects have increased threats to cultural resources, mostly as a result of the secondary effect of increased access. The development of recreation trails and site has developed access to previously inaccessible areas, increasing the potential for vandalism and illicit collection.
- The population pressure on cultural resources will increase considerably during the life of this plan. The BLM and Grand Valley communities, through planning or responding to local use of the public lands, are encouraging and promoting public lands for destination recreation which puts cultural resources at risk. Both indirect impacts, from increasing recreation trail systems, and direct impacts, from heritage tourism demands with visitors looking for quality experiences and hands-on opportunities on their public lands, will increasingly affect cultural resources.
- Native American heritage considerations are only just being discovered through consultation with the Ute Tribe. The BLM perspective of the significance of cultural resources as discrete

properties, does not match the holistic view of the tribe's traditional leaders. Cultural resources are only a part of what needs to be a larger heritage setting.

- Many of the areas of the D-E NCA that are easily accessible or have increased access proposed for future projects, are rich in cultural, heritage and archaeological resources. Some of these areas will be the next interface as a "front country" for recreation use. In these areas, sites have been degraded from "pot hunting", unauthorized collection, erosion, and vandalism. Many sites were recorded on inventories conducted prior to current standards or have outdated site forms. Because cultural resources were areas that were attractive to prehistoric peoples and met their needs, much of current human use on the landscape coincides with previous users. As a result, there is frequent overlap between the remains of prehistory and the creation of new sites and recreation areas.

Management Opportunities

Class I Overview of D-E NCA

A Class I overview should be developed to comply with Manual H-1601-1, Manual Section 8110, and WO IM 202-101 and to update and merge the current cultural resource GIS databases and files that are currently managed by both the GJFO and the UFO. The information will be used to define and evaluate the nature and distribution of property types, the historic and prehistoric contexts of properties of special significance, the uses to which property types may be assigned, the threats to site integrity, and the strategies for resource management and protection.

Cultural resource site sensitivity can be modeled based on cultural resource data from past inventories, mostly associated with Section 106 compliance actions. Modeling sensitivity is a way to provide guidance on site densities and distributions when working with sample data, such as cultural resources data. A model for cultural sensitivity has been developed for adjacent field offices based on analyzing relationships between existing cultural resource site data, cultural resource inventories, vegetation, and soil classifications through a GIS database. Similar modeling could be developed for the GJFO. The elements required in an overview are defined in Manual 8110.21.A.2 but in general will include the following:

- A management focused compilation and analysis of all available RMPPA cultural resource data and literature;
- A cultural resource narrative -- the prehistory, history, and ethnology of the planning area as currently understood;
- A discussion of the past and present geographic system, the environmental factors that influence cultural resources;
- A discussion of present research emphasis and the management actions needed to address data gaps;
- A site classification derived from the synthesis and applying it to practical management by site allocation; and
- Develop sensitivity/land use conflict maps based on site significance and complexity.

Heritage Tourism

A new initiative for the BLM is to support “heritage tourism”, a relatively new and expanding form of travel where the goal is having authentic recreational experiences that emphasize personal learning and hands-on experience to increase awareness, appreciation, and stewardship of our natural resources. Along existing road and trail infrastructure in the D-E NCA, there are cultural and paleontological resource sites that could be suitable for development as interpreted wayside stops, hands-on learning opportunities, and destination locations.

A successful initiative to support heritage tourism would necessarily involve numerous local agencies, towns, counties, chambers of commerce, and museums. The emphasis would be on interpreting local history, local character, and authenticity, while being sensitive to maintaining the setting and the integrity of the resource. Management decisions can be made to avoid authorizing conflicting uses in areas designated for heritage tourism. It is important that heritage tourism partnerships reflect a self-sustaining community-driven vision and local ownership. A successful partnership will support local businesses and help to foster cottage industries. By supporting and contributing to a broad-based heritage tourism initiative, the BLM can help to direct tourists to cultural areas that are suitable to interpretation and away from those that are not. The BLM can also help lessen resource impacts through education and interpretation.

Additional Opportunities

- Use the Class I effort to guide the cultural resources program and develop a dynamic cultural resource management framework that incorporates changes in BLM policy and law and archaeological findings. The Class I will provide a framework to identify high, medium, and low sensitivity areas for locating cultural resources, allocating cultural resources to use categories, and establishing criteria for management of sites yet to be identified. This Class I will combine information currently housed in both the GJFO and UFO and provide a framework for priority cultural resource areas or site types. Such a merger of data will allow managers to know in advance where conflicts are likely to be encountered in project planning and alternatives on how to respond to conflicts between specific cultural resources and specific land uses.
- Designate Heritage Areas as Areas of Critical Environmental Concern or as Special Management Areas to protect cultural resources in a holistic context. Such designation should focus on community stewardship and our commitment to the Ute Tribes to recognize areas and manage them as traditional landscapes.
- Work with partners and communities to increase interpretation and outreach opportunities for the public and to develop heritage tourism programs.
- Promote interpretation, education and public involvement in the cultural resource protection program as a historic preservation option.
- Expand the inventory of BLM administered lands as required under section 110 of the NHPA. Use the RMP process to develop a proactive cultural resource management framework that incorporates changes in BLM policy and law and archaeological theory.
- Protect sites by prioritizing stewardship monitoring to ensure compliance with stipulations on newly constructed projects and monitoring for condition trends in sensitive areas.
- Use assigned use categories to enhance cultural resource management decisions to protect cultural resources.

- Improve the cultural resource GIS database through combining GJFO and UFO information and systematically identify data gaps or questionable records, and prioritize these sites for reevaluation.
- Through partnerships and Heritage Adventure outreach programs, salvage at-risk cultural features to provide needed data to fill in gaps in the cultural context within the field offices. This data will allow for better-informed management decisions.
- Consider developing cultural resource interpretive programs for the Old Spanish Trail and Big Dominguez.
- Nominate important sites (such as the Waterwheel Site and Captain Smith’s Cabin and others) for listing on the National Register.
- Create archaeological districts composed of resources in specific themes, including, but not limited to:
 - Big Dominguez Canyon
 - Escalante Canyons Rock Art District (including Leonard’s Basin and Palmer Gulch)
 - Gunnison River Corridor Heritage District
 - The Old Spanish Trail
 - McCarty (outlaw) Trail
 - Bennetts Basin and Gunnison Gulch Wickiup Village
 - Dry Fork/Delta Wagon Road
 - Additional areas as future research determines.
- Emphasize the importance of large block inventories early in the planning stages for project development, especially for recreation projects. These large inventories have greatly improved the ability of the proponents and the BLM to cooperate as to the best placement of facilities while protecting cultural resources.
- Pursue new opportunities to partner with the Colorado Archaeological Society to address issues of at-risk site management.
- Continue consultation with Ute tribal members and continue programs to redevelop traditional ties to the landscape and identify and protect sacred and traditional use areas.
- Proactively promote archaeological research and develop relationships with schools, Native American tribes and other non-profit organizations to encourage research and share information with the public.
- Salvage or mitigate additional cultural properties and features, such as subsistence or habitation structures, to provide needed data to fill in gaps in the cultural context within the D-E NCA. This data could increase the confidence level for management decisions involving cultural resources, as to whether the resource should be conserved or placed in the discard use category.

2.6 Wilderness

The Wilderness Act of 1964 established a National Wilderness Preservation System and identified a wilderness area as “an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain.” The Wilderness Act goes on to further define a wilderness area as:

“An area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.”

Simply designating a wilderness does not assure its preservation. An understanding of wilderness values is needed to guide all activities in wilderness, including grazing, access to private lands, mining, fish and wildlife, cultural sites, fire, and insects and disease. Management is needed to minimize the impacts of the wilderness visitor on the immediate environment and the experience of other visitors. Wilderness management applies guidelines derived from social and natural sciences to preserve the qualities for which wilderness was established.

The long-term values of wilderness to our society and the world will be naturalness and wildness, and protection from human influence. A better understanding of these values will help keep human influence to a minimum while still providing opportunities for visitors to enjoy and experience the wilderness.

Section 2(a) of the Wilderness Act requires BLM to manage wilderness areas “so as to preserve for the protection of these areas, *the preservation of their wilderness character.*” Section 4(b) continues by saying “each agency administering any area designated as wilderness shall be responsible for preserving the wilderness character of the area. BLM’s Land Use Planning Handbook (H-1601-1) instructs BLM to make decisions during the land use planning process “*to protect or preserve wilderness characteristics (naturalness, outstanding opportunities for solitude, and outstanding opportunities for primitive and unconfined recreation).*”

While the Wilderness Act clearly instructs land-management agencies to protect the wilderness character of an area, it provides no definition of wilderness character. Section 2(c) Definition of Wilderness from the Wilderness Act is used to identify four tangible qualities of wilderness character, saying a wilderness should be: untrammeled, undeveloped, natural, and provide outstanding opportunities for solitude or primitive and unconfined recreation.

Untrammelled – wilderness is essentially unhindered and free from modern human control or manipulation. The untrammeled quality of wilderness is degraded by manipulating “the community of life”. Examples include spraying weeds, collaring wildlife, suppressing fire, lighting fire, stocking fish and wildlife, or killing predators.

Natural – wilderness ecological systems are substantially free from the effects of modern civilization. Examples of how the natural quality of wilderness is degraded include the occurrence of non-native species, vegetation communities (upland and riparian) not meeting Land Health Standards, extirpated or extinct native animals and plants, and the disruption of wildlife migration corridors.

Undeveloped – wilderness retains its primeval character and influence, and is essentially without permanent improvement or modern human occupation. The undeveloped quality of wilderness is degraded by the presence of structures or installations such as stock tanks, water developments, or scientific installations, the use of motor vehicles, motorized equipment, or mechanical transport, and inholdings.

Solitude or primitive and unconfined recreation-wilderness provides outstanding opportunities for solitude or primitive and unconfined recreation. This quality is degraded by the presence of facilities that decrease self-reliant recreation, management restrictions on visitor behavior, the sights and sounds of people inside wilderness, and the sights and sounds of occupied and modified areas outside the wilderness.

The Federal Land Policy and Management Act of 1976 (FLPMA) and the Wilderness Act (16 U.S.C. 1131–1136) direct BLM to manage wilderness areas for the public’s use and enjoyment in a manner that will leave these areas unimpaired for future use and enjoyment as wilderness by providing for protection of those areas and the preservation of their wilderness character. BLM accomplishes its wilderness management goals by taking actions to preserve these four primary qualities of wilderness character. However, there is inherent conflict between some or all of these qualities.

A single decision or action may affect more than one quality. The decision to build a water gauging station within a wilderness would affect at least two qualities. The decision to build it would degrade the untrammeled quality while the continued presence of the structure would degrade the undeveloped quality.

Furthermore, a decision or action to improve one quality may simultaneously degrade another quality. Building a bridge to reduce site impacts at a stream crossing may improve the natural quality, but it would degrade the undeveloped and the solitude or primitive and unconfined type of recreation qualities. Therefore, the wilderness manager must balance the qualities of wilderness character as they make decisions or take action within a wilderness area.

Current Condition

The Dominguez Canyon Wilderness (DCW) was designated under the Omnibus Public Lands Management Act of 2009, the same act that created the Dominguez-Escalante National Conservation Area (DENCA). The DCW is a 66,280-acre area located within the D-E NCA. The Wilderness is part of what was the Dominguez Canyon Wilderness Study Area and used to be managed separately by two different BLM field offices (Grand Junction FO and Uncompahgre FO.) The sandstone canyons and Piñon-juniper covered mesas of the wilderness offer excellent hiking opportunities. Year-round, water runs through the Little Dominguez Creek creating a great habitat for many birds, mammals and reptiles. Desert bighorn sheep have been reintroduced to the area and visitors can often see the sheep grazing at the base of the cliffs in the wilderness. Rock art on the canyon walls and wickiups on the mesas testify to the thousands of years the Native Americans used the area for hunting, shelter and as a travel corridor from the Gunnison River Valley to the Uncompahgre Plateau. These canyons also show traces of the early miners and settlers who lived and worked throughout the area.

In 2010, the four wilderness managing agencies (BLM, United States Forest Service, National Park Service, and United States Fish and Wildlife Service) began implementing the “Keeping it Wild” wilderness monitoring program. This interagency project was designed to monitor the four main qualities of wilderness character listed above as well as the fifth quality of “unique and supplemental values.” The Keeping it Wild monitoring protocol was completed for the Dominguez Canyon Wilderness

in early 2011 and consists of data from 2010 calendar year. The results of this monitoring are summarized below by quality of wilderness character.

Untrammeled

The Dominguez Canyon Wilderness is considerably untrammeled. There were a total of five chemical control weed treatments within the DCW. There were no natural fire starts in 2010, and no unauthorized actions by any group to manipulate plants, animals, pathogens, soil, water, or fire.

Natural

The Dominguez Canyon Wilderness is significantly natural. The land health assessment states that more almost 90 percent of inventoried DCW lands were meeting BLM’s Land Health Standards.

TABLE 2.6-1 DCW LAND HEALTH STANDARDS

Category	Acres	Percentage
Meeting	56,985	86.11%
Meeting with problems	2,232	3.37%
Not meeting	1,304	1.97%
Not completed	5,658	8.55%
Total	66,179	

Additionally, 100 percent of monitored streams within the Dominguez Canyon Wilderness (31.24 miles) are in properly functioning condition.

TABLE 2.6-2 DCW STREAM HEALTH

Riparian area	Functional	Riparian	Length
Big Dominguez Creek	PFC	Narrow leaf	15.34
Little Dominguez Creek	PFC	Narrow leaf	15.7
Rose Creek 1	PFC	Narrow leaf	0.2

Non-indigenous species are not significantly impacting the natural character of the Dominguez Canyon Wilderness. Nine invasive species have been documented within the wilderness and only four of them in an area of significant size.

TABLE 2.6-3 WEEDS IN DCW

Species	Acres	Percentage of wilderness
Bull thistle	0.26	0.001%
Canada thistle	87.77	0.137%
Common burdock	0.26	0.001%
Field bindweed	0.003	0%
Halogeton	90.89	0.137%
Musk thistle	0.259	0.001%
Russian knapweed	16.2	0.0245%
Tall whitetop	0.26	0.001%
Tamarisk	74.67	0.119%
Total	270.57	0.41%

Livestock grazing is a traditional use of the Dominguez Canyon Wilderness. There are two permittees and three allotments within the wilderness.

TABLE 2.6-4 GRAZING IN DCW

Allotment	AUMs used	Comments
Dominguez	~500-1,000	The grazing summary for the Dominguez Allotment states that when snow is available, up to 1200 AUMs utilize the benches/ridges in the south end of the wilderness. Frequency of actual use is unknown. These AUMs are estimated by range con; this level of use would only occur when there is adequate snow at lower elevations of the wilderness; otherwise use could be as low as 300-500 AUMs, 10% of which occurs in wilderness while moving cows from Bridgeport area to private land.
Wagon Park	440	650 cows are trailed up Big Dominguez Canyon for five days in the spring; in the fall, cows are moved into Wagon Park until weather pushes them down into the wilderness and Little Dominguez Canyon; cows are then trailed out of Little Dominguez Canyon either across the Gunnison River or up toward Triangle Mesa to Cactus Park.

Gibbler Commons	680	The Gibbler Commons includes two pastures: Farmer Canyon and Horse Mesa. Cattle are moved up to the forest through one pasture and back down from the forest on the other pasture annually. As a result, the grazing in the wilderness only occurs when cattle are in the Horse Mesa pasture.
Annual use:	~1,620-2,120	

In addition to the above measures of naturalness in the DCW, a planning assessment process called Planning for Priority Species and Vegetation (PPSV) was used, and likely will be used in the future, to record evaluations of the naturalness of the DCW. This tool streamlines the BLM’s planning for biological resources by identifying priority vegetative communities and species, by identifying specific ways to assess the health of these priority vegetative communities and species, and by using the results to drive BLM management. This same tool is being used to assess the health of biological resources throughout the NCA.

Within the DCW, five priority vegetative communities were identified. Aquatic habitat was identified as another priority species/vegetative community, as were desert bighorn sheep and the Colorado hookless cactus. Indicators were used to determine the current health rating of each priority species or vegetative community. Ratings vary from poor to fair to good to very good. Ratings of fair or poor are generally considered problem areas.

The results of specialists’ assessments during the PPSV discussions show that, overall, the DCW’s natural values are in good condition. When compared to the areas of the NCA outside of the wilderness, the DCW is in relatively good shape. However, significant problems impact the naturalness of the DCW.

The results of PPSV discussions are displayed in the table below:

TABLE 2.6-5 PPSV IN THE DCW

Priority Species or Vegetative Community	Current Rating
Sagebrush Shrublands	Fair
PJ Woodlands	Very Good
Seeps	Good
Riparian/Wetlands	Very Good
Desert Shrub/saltbush	Good
Aquatic Systems	Fair
Colorado hookless cactus	Good
Desert bighorn sheep	Good

In regard to sagebrush shrublands, the DCW was judged to be in fair condition because of the following:

- The expected composition of these communities is unbalanced (i.e. an unnatural ratio of grass to shrub to forb).
- The DCW's sagebrush communities do not provide sufficient habitat for sage grouse, which require sage cover between 10-30 percent.
- There is an overabundance of the non-native crested wheatgrass, which was planted following vegetation treatments in the 1960s and which reduces the biological diversity and ecological value of the community.

In regard to aquatic systems, the DCW was judged to be in fair condition because of the following:

- A lack of native trout in the upper reaches of the Dominguez watershed, which is instead dominated by non-native rainbow and brown trout.
- The inaccessibility of the lower reaches of Big and Little Dominguez Creeks to fish coming out of the Gunnison River to spawn. This prevents the natural movement of the Gunnison River's native fish species, which include federally threatened and endangered fish species, as well as BLM sensitive fish species.
- The small tributaries of the Gunnison River in the NCA region are impaired for water quality because of excessive concentrations of selenium. However, this is likely the result of irrigation practices upstream of the NCA and is not likely a result of the BLM's current management practices.

Undeveloped

The Dominguez Canyon Wilderness has signs of human use throughout the area. There are two residential structures within the wilderness. The Billy Rambo Homestead in Little Dominguez Canyon consists of an old house, an outbuilding, old farming implements, ranching and farming supplies. The property the homestead occupies has been deeded to BLM, and Mr. Rambo has a lease to occupy the property for his lifetime. There are also remnants of an old cabin on Tatum Ridge.

There are approximately 4.2 miles of fencing within the wilderness.

There are eight dams within the wilderness. They are:

- Bar X Pond 1
- Edna Retention Dam
- Tri Mesa Pond
- Bang Retention Dam
- Horse Mesa Dam 1
- Triangle Dam 2
- Star Mesa Retention
- Star Reservoir

None of the water impoundments are slated for closure, and all are judged in good working order. The BLM has an agreement with the local rancher that authorizes the use of motorized vehicles for

maintenance -- removing sediment from the ponds every three-to-five years. The impoundments are all on ephemeral streams and have no impact on Wild and Scenic River eligibility of year-round streams.

There are two existing rights-of-way within the wilderness. Both C17563 and C20070 at Steamboat Spring are public water withdrawals from land laws and mineral entry. In addition to these ROWs, there are three abandoned mines within the wilderness. They are:

- Upper Big Dominguez Shaft
- Dominguez Prospect
- Dominguez Canyon Adit and Shaft

All three have been reclaimed according to Abandoned Mine Reclamation standards.

There is only one inholding within the Dominguez Canyon Wilderness. The Colorado Division of Wildlife has a 640-acre parcel on Sowbelly Ridge, Tatum Ridge, and Camp Ridge. There is very little threat of further development of this area.

Opportunities for solitude or primitive and unconfined recreation

Recreational use and access

Visitor use of Dominguez Canyon Wilderness is best described as light to moderate and subject to seasonal variations. BLM estimates total recreational use of the Wilderness is approximately 12,000 visits per year.

There are five primary recreation access points to the wilderness (Cactus Park, Dominguez Campground/Trailhead, the Gunnison Pack Trail, the McCarty Trailhead, and the mouth of Dominguez Canyon). In 2005, BLM constructed a bridge across the Gunnison River at Bridgeport to provide safe, legal foot access to the Dominguez Canyon Wilderness Study Area – in contrast to hikers trespassing over a nearby, private bridge. Recreational use via the Bridgeport Bridge increased by approximately 300 percent due to this improved access. But more work remains to be done. Currently, hikers bound for the bridge have to walk along the noisy and potentially dangerous Denver & Rio Grande Railroad tracks. BLM is working on an alternate route involving a hillside trail and tunnel under the tracks.

The other popular access to Big Dominguez Canyon is by boaters on the Gunnison River. There are several extremely popular campsites outside the wilderness at the mouth of Big Dominguez Canyon. Many float groups consist of up to 25 people leading to occasional crowding and temporary loss of solitude if they all hike into the wilderness together.

The Dominguez Campground is located adjacent to the wilderness boundary at the top end of Big Dominguez Canyon. The campground is at an elevation of 7,000' which prevents much use during the winter but is more comfortable during the summer. Visitors can hike into the upper end of Big Dominguez Canyon from this site but the majority of visitors only hike a mile or two before turning around.

Other common access points to the wilderness include the Cactus Park Trailhead and the McCarty Trailhead in Escalante Canyon.

Solitude and primitive or unconfined recreation

Most areas of the Dominguez Canyon Wilderness provide outstanding opportunities for solitude. The most popular hike in the wilderness is from the Bridgeport Bridge or the Gunnison River to the petroglyphs located approximately 1.5 miles from the river in Big Dominguez Canyon. The opportunity for solitude continues to exist in this area but is frequently impacted by the presence of large river groups or multiple groups hiking in from the Bridgeport Bridge. Most of these hikers do not continue up Big Dominguez Canyon past the petroglyphs or turn into Little Dominguez Canyon so outstanding opportunities for solitude almost always exist in these areas.

The Dominguez Canyon Wilderness provides outstanding opportunities for primitive and unconfined recreation as there are currently very few restrictions on visitor use. The area from the mouth of Dominguez Canyon to Dry Fork (just above the Big Dominguez petroglyphs) has been managed as a “day-use only” area since 2005.

Recreation facilities

There are approximately 101 miles of routes within the wilderness. Thirty-three miles of these routes are former roads (with evidence of construction), 45 miles are old two tracks, and 22 miles are singletrack routes. There are no trail signs within the wilderness and no other agency-provided recreation facilities. Twelve user-created dispersed campsites have been documented within the wilderness.

Unique and supplemental values

The act creating the Dominguez Canyon Wilderness identified a wide variety of purposes for the designation of the NCA and Wilderness. The unique and important geological, cultural, archaeological, paleontological, natural, scientific, recreational, wilderness, wildlife, riparian, historical, educational, and scenic resources were specifically cited.

The Dominguez Canyon Wilderness is known for the presence of desert bighorn sheep and the wealth of cultural resources. These resources will be discussed in greater length in other sections of this document but it should be acknowledged that they drive visitor use and may require special management at some point in the future.

Forecast

The current management of the wilderness is focused on developing a resource management plan and wilderness management plan for the national conservation area and wilderness. On-the-ground presence is minimal, and there are currently no regulations in the Dominguez Canyon Wilderness other than those in the Code of Federal Regulations (ex: 43 CFR 8365). Several years ago, a day use only area was established from the mouth of Dominguez Canyon to the confluence of Dominguez Canyon and Dry Fork but no supplemental rules were ever established, resulting in this day use only area being an unenforceable suggestion.

Untrammelled

In the past few years, only a few trammeling actions have been taken with the wilderness. Under current management, few additional actions would be taken to negatively impact the untrammelled quality of the wilderness and it should continue to exist in its current state.

Natural

The naturalness of the wilderness would remain relatively stable under current management. In the past few years, a few invasive species treatments have been undertaken to improve the naturalness of the wilderness. These actions could continue under current management, therefore improving the naturalness of the area. Naturalness could be negatively impacted in localized areas due to unregulated recreational use.

A potential initiative to replace non-native trout with native trout species on the Uncompahgre Plateau could significantly improve the naturalness of the DCW's aquatic systems. This initiative was begun by the US Forest Service in conjunction with the BLM and Colorado Division of Wildlife.

Undeveloped

The undeveloped character of the wilderness could change under current management. A new trailhead was constructed in Cactus Park to provide access to the wilderness. Plans are being developed to construct a new trail from the new trailhead to the Cactus Park Trail where it drops into Big Dominguez Canyon. Under current management, no actions would be taken to improve the undeveloped character of the area.

Outstanding opportunities for solitude or a primitive and unconfined type of recreation

While recreational use of the wilderness remains relatively low (>15,000 visits per year) it is somewhat concentrated based on location and season, resulting in fairly heavy use of lower Dominguez Canyon during peak periods, particularly summer weekends. This use is already impacting the outstanding opportunity for solitude within the wilderness and any increase in use will further decrease the opportunity to enjoy that critical component of wilderness character. The day-use only area is designed to improve one's ability to enjoy outstanding opportunities for solitude, but this requirement is unenforceable under current management.

Conversely, due to the lack of enforceable regulations, the opportunity to enjoy true unconfined recreation would continue to exist.

Unique and supplemental values

There are many unique and supplemental values within the wilderness. A desert bighorn sheep herd is actively managed by the Colorado Division of Wildlife, including occasional over flights of the wilderness. This activity would be permitted to continue under current management. Cultural resources are also a much-enjoyed supplemental value of the Wilderness. Under current management, cultural resources would continue to be mildly impacted by recreational use, and these impacts would likely increase with any increase in visitor use.

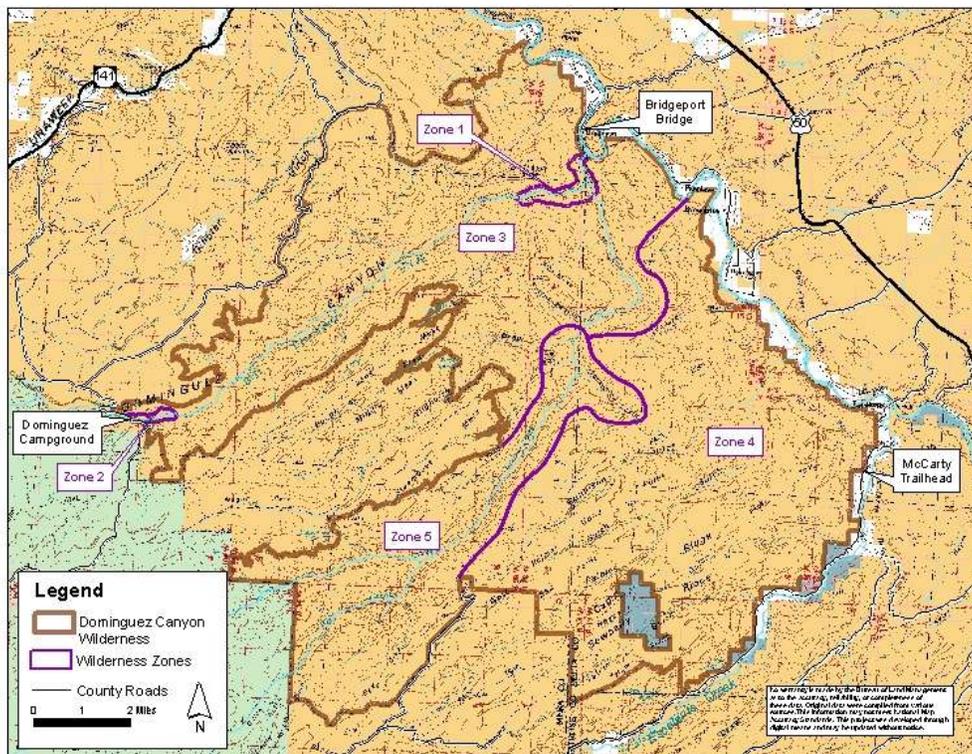
Wilderness Focus Groups

In December 2010, Mesa State College's Natural Resources and Land Policy Institute held two focus groups on wilderness issues. The Grand Junction focus group had 27 participants and the Delta focus group had 13. Both meetings followed the same script with some minor additions based upon conversation and questions, particularly in the Delta group.

The focus groups were set up to determine community preferences for future management of the Dominguez Canyon Wilderness with emphasis placed on the preservation of wilderness character and more specifically on the inherent qualities of wilderness character and the tradeoffs that could arise when one or more qualities conflict with each other.

Five qualities (untrammelled, natural, undeveloped, solitude and unconfined recreation, unique and supplemental values identified in the designating legislation) were explained to participants at the beginning of each meeting. A series of questions were then asked in which participants were given a choice between two potential 'tradeoffs' between one or more of the qualities of wilderness character. Participants used a hand-held clicker to make a selection on a range of 1 to 5, representing whether they felt strongly about one quality over another, had a milder preference for one quality, or didn't have a preference at all. The focus group concluded with a series of questions based upon five wilderness zones created by BLM for these meetings. Participants were asked to identify their most important quality for each zone, their second most important quality for each zone, and their least important quality.

MAP 2.6-1 D-E NCA ZONE MAP



Wilderness focus groups zone map – December 2010

Example of wilderness focus group question

Title removal of an old gate

Tradeoff: untrammeled vs. undeveloped

Situation: a large metal gate was installed on an old route before the area was designated as wilderness. Should BLM go in and remove the gave (trammeling the wilderness) to improved the undeveloped character of the wilderness?

Participants then had 15-20 seconds to made a selection from one of five choices:

- A – strongly prefer untrammeled
- B – somewhat prefer untrammeled
- C – I don't know or I don't prefer one to the other
- D – somewhat prefer undeveloped
- E – strongly prefer undeveloped

Participants were shown Slide 2.6-1:

SLIDE 2.6-1 TRAMMEL ISSUE

Removal of an Old Gate
untrammeled vs. undeveloped

- **A large metal gate was installed on an old route out to Triangle Mesa before the area was designated as a wilderness. Should BLM go in and remove this gate (trammeling the wilderness) to improve the undeveloped character of the wilderness?**

A	• <u>Strongly prefer untrammeled</u>
B	• <u>Somewhat prefer untrammeled</u>
C	• <u>I Don't Know or don't prefer one to the other</u>
D	• <u>Somewhat prefer undeveloped</u>
E	• <u>Strongly prefer undeveloped</u>

Responses to gate/untrammled vs. undeveloped question

TABLE 2.6-6 RESPONSES BY COMMUNITY

	Delta	Grand Junction	Both Focus Groups
Response A	5	5	10
Response B	1	6	7
Response C	1	3	4
Response D	1	5	6
Response E	1	6	7
Total	9	25	34

For example, a Delta participant comment about the first question was *“it’s just taxpayer money to take the gate down, it’s a waste of money.”* Delta participants were clearly in favor of not removing the gate (6 to 2) and maintaining the untrammled character of the wilderness while Grand Junction participants were evenly split (11 to 11) between removing the gate and leaving the gate.

Dominant values by wilderness zone

The focus groups concluded with a series of questions designed to determine what participants felt was the most important quality of wilderness character within the Dominguez Canyon Wilderness.

Through responses to these questions, some themes emerge about the participants views about future management direction of the wilderness. There were significant differences between attitudes of the Delta focus group and the Grand Junction focus group. The Delta focus group showed a strong, steady preference for preserving the untrammled character of the wilderness as well as maintaining the opportunity for unconfined recreation. The Grand Junction focus group was more diverse in their responses but with a general preference in favor of naturalness and the unique and supplemental qualities of the wilderness.

TABLE 2.6-7 GRAND JUNCTION FOCUS GROUP RESPONSES

Value	Most Important		2 nd Most Important		Least Important	
	Delta	GJ	Delta	GJ	Delta	GJ
Untrammeled (UT)	3	0	3	0	3	1
Natural (N)	0	5	0	3	2	0
Undeveloped (UD)	0	0	0	3	0	0
Solitude or Primitive and Unrestricted recreation (S,UR)	5	0	4	0	0	4
Unique and Supplemental Values (UV)	0	1 (Zone 1)	0	0	4	4

Management implications

The wilderness focus groups served a variety of purposes for wilderness management planning. First of all, they introduced the public to the concept of wilderness character and explained that this was the driving force behind wilderness management. Secondly, the responses to the tradeoff questions gave managers insight into participant preferences for management actions in situations that will likely arise within the Dominguez Canyon Wilderness over the life of the resource management plan (RMP) and wilderness management plan (WMP). Finally, the questions about dominant values can help BLM develop a range of alternative for both the RMP and WMP.

2.7 Scenic

What is Visual Resource Management (VRM)?

In order to meet its responsibility to maintain the scenic values of the public lands, BLM has developed a VRM system that addresses the following:

- Different levels of scenic values require different levels of management. For example, management of an area with high scenic value might be focused on preserving the existing character of the landscape, and management of an area with little scenic value might allow for major modifications to the landscape. Determining how an area should be managed first requires an assessment of the area’s scenic values.
- Assessing scenic values and determining visual impacts can be a subjective process. Objectivity and consistency can be greatly increased by using the basic design elements of form, line, color,

and texture, which have often been used to describe and evaluate landscapes, to also describe proposed projects. Projects that repeat these design elements are usually in harmony with their surroundings; those that don't create contrast. By adjusting project designs so the elements are repeated, visual impacts can be minimized.

BLM's VRM system provides a way to identify and evaluate scenic values to determine the appropriate levels of management. It also provides a way to analyze potential visual impacts and apply visual design techniques to ensure that surface-disturbing activities are in harmony with their surroundings.

How are visual resource inventoried?

The first stage of the BLM's VRM system involves identifying the visual resources of an area and assigning them to inventory classes using BLM's visual resource inventory process. The process involves rating the visual appeal of a tract of land, measuring public concern for scenic quality, and determining whether the tract of land is visible from travel routes or observation points. The visual resources in the NCA were inventoried as part of the Grand Junction and Uncompahgre Resource Management Plan revisions. The Visual Resource Inventory (VRI) includes three primary components:

- Scenic Quality Evaluation
- Sensitivity Level Determination
- Delineation of Distance Zones

The Scenic Quality Evaluation measures the visual appeal of a landscape. Scenic quality is determined by reviewing landform, vegetation, water, color, influence of adjacent scenery, scarcity, and cultural modifications.

Sensitivity Levels are a measure of public concern for the scenic quality. BLM-administered public lands are assigned high, medium, or low sensitivity levels based on a number of factors including type of users, amount of use, public interest, adjacent land uses, and special areas. Distance zones are based on the relative visibility from travel routes. Distance zones include the **foreground-middleground** (3 – 5 miles from viewing locations), **background** (5 – 15 miles from viewing locations), and **seldom seen** (areas not seen).

These primary components were evaluated to assign VRI Classes to the BLM-administered public lands in the NCA. Class I is assigned to those areas where a management decision has been made previously to maintain a natural landscape. This includes areas such as national wilderness areas, the wild section of national wild and scenic rivers, and other congressionally and administratively designated areas where decisions have been made to preserve a natural landscape. In the NCA, the Dominguez Canyon Wilderness was assigned Class I. Other than Class I areas, Class II areas are the most valued, Class III is moderately valued, and IV is least valued.

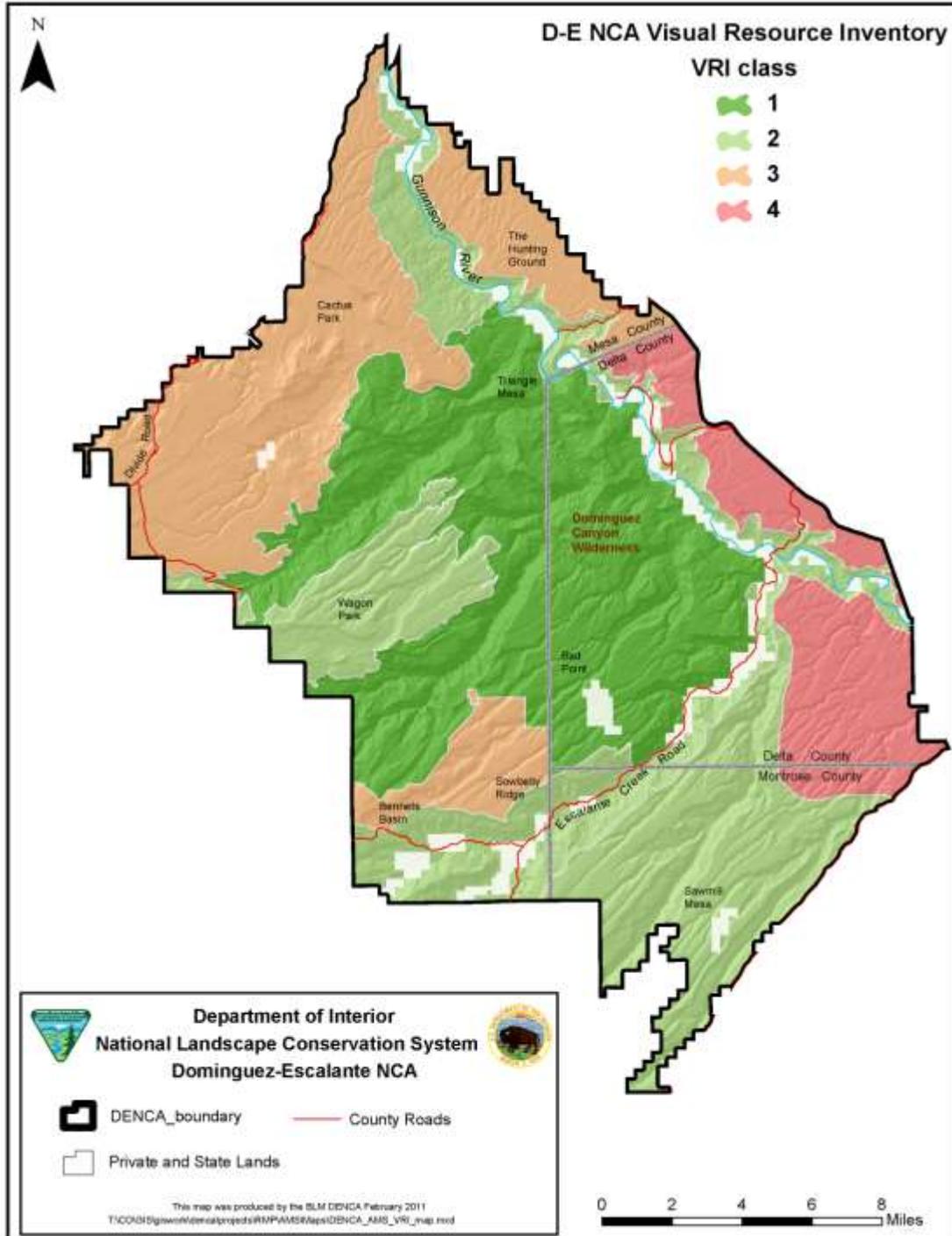
Current Condition

Using the BLM's VRI process, the NCA visual resources were evaluated as part of the Grand Junction and Uncompahgre Resource Management Plan Revisions. The results of the inventory are shown in Table 2.8-1 and Map 2.8-1.

TABLE 2.7-1 VRI INVENTORY CLASS

Visual Resource Inventory Class	Acres
I	67,126
II most valued	76,361
III moderately valued	52,373
IV least valued	22,533

MAP 2.7-1 VRI INVENTORY CLASS



Current VRM in the D-E NCA

Combined, the current RMPs only designated VRM Classes for 54 percent of the land in the NCA. Lands without a VRM Class designation have been managed using the VRM Class III objective in both the GJO

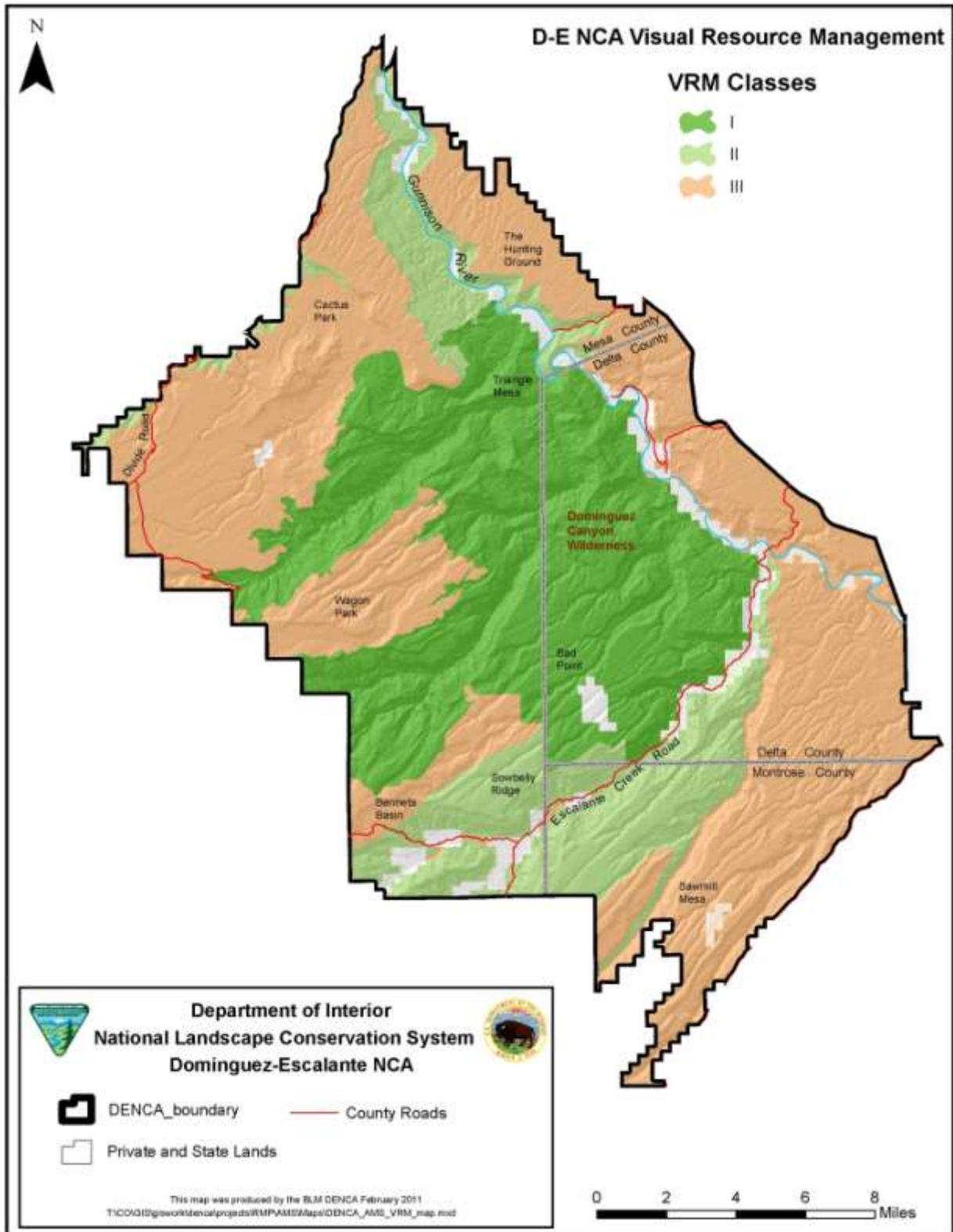
and the UFO. The exception has been in the UFO part of the Dominguez Canyon Wilderness Study Area. The UFO RMP did not designate a VRM Class for the WSA. These WSA lands have been managed as VRM Class I, consistent with the management in the GJFO. Combining the RMP designations, the VRM Class III objective in areas outside the WSA, and the VRM Class I objective in the UFO portion of the WSA, current VRM Classes for the NCA are summarized in Table 2.7-2 and Map 2.7-2, VRM Classes, below.

TABLE 2.7-2 VRM CLASSES IN D-E NCA

Current Visual Resource Management Class	Acres
I	69,237
II	41,300
III	107,753
IV	0



Map 2.7-2 Visual Resource Management Classes



Adequacy of Current Management

Recognizing one of the legislated purposes of the NCA is the scenic quality, current visual resource management is not adequate to protect visual resources. Managing for VRM Class III objectives allows for a moderate level of change to the landscape. Allowing a moderate level of change could result in deterioration of the scenic quality of the NCA.

Management Opportunities

As mentioned above, VRM Class designations are made as part of the resource management planning process. Designating more acres as VRM Class I or II will result in more protection of the scenic quality of the NCA.

2.8 Air resources (i.e. air quality, climate and noise)

Indicators and Current Condition

This section describes existing air resource conditions in the planning area, focusing on climate, air quality, and noise.

Climate

Climate represents the long-term statistics of daily, seasonal, and annual weather conditions of a particular region throughout the year, averaged over a series of years (typically 30 years). Climate is both a driving force and a limiting factor for biological, ecological, and hydrologic processes, as well as for resource management activities such as disturbed site reclamation, wildland fire management, drought management, rangeland and watershed management, and wildlife habitat administration. Climate also influences renewable and non-renewable resource management, affecting the productivity and success of many BLM activities. Incorporating effective application of climate information into BLM programs, projects, activities and decisions authorizing use of the public lands is critical for effective management. Climate data include information such as trends in precipitation, temperature, wind speed, cloud cover, relative humidity, and solar radiation.

Decisions made under the RMP will have no meaningful direct effects on area weather conditions, but can have indirect effects resulting from activities that release greenhouse gas air pollutants such as carbon dioxide, methane, or nitrous oxide gases. Greenhouse gases are compounds in the atmosphere that absorb infrared radiation and re-radiate a portion of that back toward the earth's surface, thus trapping heat and warming the earth's atmosphere.

The planning area is located in a high plateau continental region of mesas, mountains, and high desert. The climate is characterized by dry, sunny days and clear nights with extreme daily temperature changes. Table 2.1 provides a summary of weather records from three National Cooperative Observer Network weather stations in the planning area compiled by the Western Regional Climatic Center.

Throughout much of the planning area, average daily winter temperatures range from a low of around 19° Fahrenheit (F) to a high of nearly 40° F. In summer, average daily temperatures range from around 55° F up to the low 90s° F. Higher, surrounding elevation locations are cooler, with extreme minimum temperatures approaching -40° F, with extreme maximum temperatures near 100° F.

Monthly precipitation is relatively uniform, with minimum precipitation typically occurring during June, followed by a period of maximum precipitation caused by summer thunderstorms. Higher elevation monthly precipitation is more uniform, but contains less moisture in mid-winter snow. Snowfall typically occurs from November through April (and October through May at higher elevations), with light accumulation.

As determined by the Grand Junction Airport Weather Station, the regional prevailing wind direction is from the east and east-southeast. Wind speed is typically highest during spring, but averages only 7.5 miles per hour annually.

TABLE 2.8-1 SUMMARIES OF WEATHER RECORDS

GRAND JUNCTION 6 ESE, COLORADO (053489)

Period of Record Monthly Climate Summary

Period of Record : 3/26/1962 to 7/31/2010

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	38.5	46.2	56.6	65.5	75.9	86.7	92.9	89.8	80.8	67.8	52.1	40.2	66.1
Average Min. Temperature (F)	17.3	23.9	32.2	39.4	48.4	57.2	63.7	61.4	52.5	40.8	29.3	19.4	40.5
Average Total Precipitation (in.)	0.48	0.46	0.87	0.85	0.95	0.51	0.72	0.82	0.96	0.96	0.74	0.59	8.90
Average Total SnowFall (in.)	3.4	1.9	1.6	0.4	0.1	0.0	0.0	0.0	0.0	0.3	1.3	3.8	12.7
Average Snow Depth (in.)	1	0	0	0	0	0	0	0	0	0	0	1	0

Percent of possible observations for period of record.

Max. Temp.: 98.1% Min. Temp.: 98% Precipitation: 97.8% Snowfall: 94.8% Snow Depth: 87.2%

DELTA, COLORADO (052192)

Period of Record Monthly Climate Summary

Period of Record : 1/ 1/1893 to 12/31/1999

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	38.7	47.0	57.4	67.6	77.5	87.9	93.1	90.1	82.4	69.9	53.4	40.6	67.1

Average Min. Temperature (F)	12.2	19.0	26.1	33.8	41.9	48.5	54.8	53.1	44.1	33.4	22.8	14.6	33.7
Average Total Precipitation (in.)	0.48	0.43	0.56	0.61	0.75	0.48	0.72	1.12	0.94	0.93	0.53	0.44	8.01
Average Total SnowFall (in.)	4.6	2.7	2.0	0.5	0.0	0.0	0.0	0.0	0.0	0.2	1.5	3.7	15.2
Average Snow Depth (in.)	1	0	0	0	0	0	0	0	0	0	0	0	0

Percent of possible observations for period of record.

Max. Temp.: 93.8% Min. Temp.: 93.8% Precipitation: 93.2% Snowfall: 91.3% Snow Depth: 43%

GATEWAY 1 SE, COLORADO (053246)

Period of Record Monthly Climate Summary

Period of Record : 9/ 1/1947 to 7/31/2010

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	42.1	49.9	59.1	68.2	77.7	87.8	93.2	90.4	82.3	70.0	55.3	43.4	68.3
Average Min. Temperature (F)	18.0	24.5	31.4	38.1	46.5	54.9	61.8	59.5	50.9	38.9	28.9	20.0	39.4
Average Total Precipitation (in.)	0.75	0.69	1.04	1.06	0.93	0.57	1.00	1.32	1.12	1.27	0.89	0.74	11.37
Average Total SnowFall (in.)	5.4	1.8	2.3	0.7	0.0	0.0	0.0	0.0	0.0	0.1	1.1	4.5	15.9
Average Snow Depth (in.)	1	0	0	0	0	0	0	0	0	0	0	0	0

Percent of possible observations for period of record.

Max. Temp.: 76.9% Min. Temp.: 76.4% Precipitation: 95.9% Snowfall: 95% Snow Depth: 92.5%

Climate Change

The temperature of Earth's atmosphere is regulated by a balance of radiation received from the sun, minus the amount of that radiation absorbed by the planet and atmosphere. In the atmosphere, greenhouse gases, keep the temperature of Earth warmer than it would be otherwise, and allow the planet to sustain life. While these gases and particles have

occurred naturally for millennia, there has been an increase in their atmospheric concentration since the start of the industrial age, contributing to observed climate variability beyond the historic norm.

Anthropogenic (or human-caused) emissions include greenhouse (GHG) emissions from electric power generation, industrial processes, transportation technology, urban development, agricultural practices, and other human activity. The Intergovernmental Panel on Climate Change (IPCC) estimates the following changes in global atmospheric concentrations of the most important greenhouse gases (IPCC 2001, 2007):

- atmospheric concentrations of CO₂ have risen from a pre-industrial background of 280 ppm to 379 ppm in 2005;
- atmospheric concentrations of CH₄ have risen from a pre-industrial background of about 0.70 ppm to 1.774 ppm in 2005; and
- atmospheric concentrations of N₂O have risen from a pre-industrial background of 0.270 ppm to 0.319 ppm in 2005.

The IPCC has concluded that these changes in atmospheric composition are almost entirely the result of human activity, not the result of changes in natural processes that produce or remove these gases (IPCC 2007). The IPCC estimates that mean global surface temperatures increased by 0.74° C (1.3° F) from 1906 to 2006 (IPCC 2007). In addition, the rate of warming averaged over the past 50 years is nearly twice that for the past 100 years. Climate Models indicate that average temperature changes are likely to be greater in the Northern Hemisphere. Northern latitudes (above 24° N) have exhibited temperature increases of nearly 2.1°F since 1900, with nearly a 1.8°F increase since 1970 alone. Without additional meteorological monitoring systems, it is difficult to determine the spatial and temporal variability and change of climatic conditions, but increasing concentrations of GHGs are likely to accelerate the rate of climate change.

In 2001, the IPCC indicated that by the year 2100, global average surface temperatures would increase between 2.5°F and 10.4°F above 1990 levels, depending on the assumptions made in the predictive model. The National Academy of Sciences has confirmed these findings, but also has indicated there are uncertainties regarding how climate change may affect different regions. Computer model predictions indicate that increases in temperature will not be equally distributed, but are likely to be accentuated at higher latitudes. Warming during the winter months is expected to be greater than during the summer, and increases in daily minimum temperatures are more likely than increases in daily maximum temperatures. Increases in temperatures would increase water vapor retention in the atmosphere, and reduce soil moisture, increasing generalized drought conditions, while at the same time enhancing heavy storm events. Although large-scale spatial shifts in precipitation distribution may occur, these changes are more uncertain and difficult to predict.

According to the Colorado Water Conservation Board's 2008 "Climate Change in Colorado" report, temperatures in Colorado increased by approximately 2° F between 1977 and 2006. As reported in the 2007 Colorado Climate Action Plan developed by the state of Colorado, climate change effects within Colorado have included:

- shorter and warmer winters with a thinner snowpack and earlier spring runoff
- less precipitation overall with more falling as rain
- longer periods of drought
- more and larger wildfires
- widespread beetle infestations
- rapid spread of West Nile virus due to higher summer temperatures.

As aforementioned, climate models cannot predict with accuracy what future projections may look; however, they are being refined and downscaled as science and technology improves. At present, most existing climate prediction models are not at a scale sufficient to estimate potential impacts of climate change within the analysis area. That said, in 2008, the Colorado Water Conservation Board did complete some projections of some potential future variations.

In relation to a 1950-1999 baseline, climate models project that Colorado will warm 2.5° F by 2025, and 4° F by 2050. The 2050 projection indicates that summers will warm by +5° F, and winters by 3° F (Colorado Water Conservation Board 2008). Future potential predicted climate change impacts on Colorado include:

- more frequent and longer lasting heat extremes that stress electrical utility demands
- longer and more intense wildfire seasons
- midwinter thawing and earlier melting of snowpack
- lower river flows in summer months
- water shortages for irrigated agriculture
- slower recharge of groundwater aquifers
- migration of plant and animal species to higher elevations
- more insect infestation in forests.

Other than wildfires, no large-scale emissions of greenhouse gases are anticipated from inside D-E NCA. Much smaller scale emissions from inside the NCA would be those from motor vehicles and livestock.

Air Quality

The federal and state governments have established ambient air quality standards for six criteria pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), particulate matter smaller than 10 microns in effective diameter (PM₁₀), particulate matter smaller than 2.5 microns in effective diameter (PM_{2.5}), and sulfur dioxide (SO₂). Oxides of nitrogen (NO_x) and volatile organic compounds (VOCs) emissions are precursors for producing ozone in the troposphere. These compounds are precursors for producing photochemical smog (ozone) and secondary particulate matter. Ozone (including its NO_x and VOC precursors), PM_{2.5}, and SO₂ are considered regional air pollutants, typically affecting air quality on a regional scale.

Pollutants such as CO₂ and lead are considered local, typically accumulating close to their emission sources. PM₁₀ can be considered both a regional and local air pollutant, depending on the particular circumstance. In addition, long-range transport of NO₂, PM₁₀, PM_{2.5}, and SO₂ can contribute to regional visibility degradation, as well as atmospheric deposition at sensitive areas (such as national parks and wilderness areas) many miles downwind of individual emission sources.

Existing Air Pollutant Emissions

Air quality in the planning area is affected primarily by emissions from agricultural, urban, and industrial sources, which are quantified on a countywide basis. Table 2.9-2 shows the average annual regional air pollutant emissions for three counties in and around the planning area.

TABLE 2.8-2 - I ANNUAL AIR POLLUTANT EMISSIONS 2008**COUNTY EMISSIONS (TONS PER YEAR)**

County	CO	NO ₂	PM ₁₀	Benzine	SO ₂	VOC
Delta	12,132	1,572	2,504	46	48	18,106
Mesa	40,688	9,048	8,050	161	2,879	39,828
Montrose	19,533	3,665	5,823	71	1,358	21,220

Source: www.co.gov/airquality/inv_maps_2008.aspx

Since most of the planning area is rural, actual air quality is likely to be cleaner than that measured in towns, and especially cleaner than the Denver metropolitan area. The entire D-E NCA planning area is classified as having good air quality. Inversions can form over the NCA, and dust storms can stir up geologic dust, causing temporary particulate problems, according to Delta County Environmental Health. The air quality criteria pollutant most likely to occur is inhalable particulate matter, specifically particles ten microns or less in diameter (PM₁₀) associated with fugitive dust. The Colorado Air Pollution Control Division (APCD) estimates the maximum PM₁₀ levels (24-hour average) in rural portions of western Colorado to be near 50 micrograms per cubic meter (µg/m³). This estimate is well below the National Ambient Air Quality Standard (NAAQS) for PM₁₀ (24-hour average) of 150 µg/m³.

However, there have been large dust storm events in and around the planning area in recent years. "Increasing Eolian dust deposition in the western United States linked to human activity", published in 2008 in Nature Geoscience, determined that dust load levels increased by 500 percent above the late Holocene average following the increased western settlement of the United States during the nineteenth century. The authors suggest that the increased dust deposition is caused by the expansion of livestock grazing in the early twentieth century.

Fugitive dust raised by motor vehicles on unpaved roads and trails can contribute significantly to air-quality problems. Fugitive dust may impact more total area than any other impact of roads, paved or unpaved (Foreman and others, 2003), and it can have significant effects on ecosystems (Westec, 1979). Dust is created and raised into the air as OHVs disturb soil crusts, abrade and pulverize soils, and generate wind currents. Once soil surfaces are disturbed, wind erosion may increase the amount of debris flow, such as dust plumes that can extend for hundreds of miles (Lovich and Bainbridge, 1999).

Noise

TABLE 2.8-3- NOISE TERMINOLOGY

TERM	DEFINITION
<i>A-Weighted Decibel (dBA)</i>	<i>An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear</i>
<i>Community Noise Equivalent Level (CNEL)</i>	<i>The energy average of the A-weighted sound levels occurring during a 24-hour period with 5 dB added to the A-weighted sound levels occurring during the period from 7:00 p.m. to 10:00 p.m. and 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.</i>
<i>Day-Night Level (Ldn)</i>	<i>The energy average of A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.</i>
<i>Sound</i>	<i>A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone</i>

Measuring Sound

Noise is unwanted sound, including sound that is loud, unpleasant, unexpected, or otherwise undesirable. Sound measurement equipment has been designed to adjust the actual sound pressure to correspond with human hearing. A-weighted correction factors de-emphasize very low and very high frequencies of sound in a manner similar to the response of the human ear. Therefore, the A-weighted decibel (dBA) is a good correlation to a human's subjective reaction to noise. The dBA measurement is based on a logarithmic scale of sound pressure. Assuming 60 dBA is the noise level experienced in normal conversation with two people standing five feet apart, a noise of 50 dBA would be half as loud, and a noise of 70 dBA would be twice as loud. For humans, a change in sound level of 3 dB is generally just noticeable when the intruding noise is of a similar character to the background noise (such as an increase in existing traffic noise), and a change of ± 5 dB would clearly be noticeable. However, when the intruding noise is of a different character than the background noise (such as a motorcycle within existing car traffic), a noise level increase of less than 1.0 dBA could be discernible.

Noise Levels in the Planning area

The planning area is sparsely populated. Although ambient noise level measurements are not available, locations such as the planning area typically have relatively low noise levels, in the range of 35 to 50 dBA, depending on wind conditions. As described below, noise levels near roadways, can be

considerably louder than natural background levels. Within the planning area, it is anticipated that most noise would occur near major roadways and busy OHV trails. However, current inventories regarding the types, locations, and ambient noise levels are not currently available.

Noise Sources in the Planning area

Common sources of noise in the planning area are likely to include:

- vehicular traffic (including the use of off-highway vehicles) on roadways
- recreational use of off-highway vehicles (OHVs)
- trains on railroad

Other noise sources in the planning area include non-motorized recreational use, noise from natural sources (such as wildlife, wind, and thunder), equipment from private agricultural activities, and aircraft overflights. Noise from traffic can vary widely depending on the volume, speed, and size of vehicles. Motorcycles and off-road recreational vehicles traveling on unpaved roads and trails generally produce lower hourly-average noise levels, but the short-term peak noise can be high and disruptive to nearby recreationists and wildlife.

Sounds from ORVs are emitted more frequently than other high-intensity sounds in wildlife habitats (Brattstrom and Bondello, 1983), and the effects on animals can be significant. Animals can experience weeks-long hearing loss after exposure to OHV noise (Ibid), making them less or unresponsive to predator sounds. ORV noise can simulate natural sounds like thunder, triggering premature, seasonal responses, such as the spadefoot toad emerging too early from its burrow (Ibid).

Noise, lights, and other disturbances associated with OHV activities also have the potential for eliciting stress responses from a broad spectrum of wildlife taxa. Studies have shown that ungulates, birds, and reptiles all experience accelerated heart rates and metabolic function during disturbance events. In turn, animals may be displaced and experience reproductive failure and reduced survivorship (see review in Havlick, 2002).

Noise from ATVs and other motorized recreational vehicles varies greatly depending on the age, condition, make, and model. However, noise emitted from certain types of OHVs can be as high as 110 decibels (Lovich and Bainbridge, 1999). Table 2.8-4 provides examples of noise levels generated by common sources in the planning area.

TABLE 2.8-4 - TYPICAL NOISE LEVELS (DBA)

<i>Noise Source</i>	<i>Average Noise</i>	<i>Range of Noise</i>
<i>Ambulance siren (100 feet)</i>	<i>100</i>	<i>95-105</i>
<i>Motorcycle (25 feet)</i>	<i>90</i>	<i>85-95</i>
<i>Constant exposure to the higher sound levels can lead to hearing loss</i>		
<i>Single truck (25 feet)</i>	<i>80</i>	<i>75-85</i>
<i>Single car (25 feet)</i>	<i>65</i>	<i>60-70</i>
<i>Within 100 feet of a highway</i>	<i>60</i>	<i>55-65</i>
<i>Normal conversation (5 feet apart)</i>	<i>60</i>	<i>57-63</i>
<i>Recreational area</i>	<i>45</i>	<i>40-50</i>
<i>Residential area at night</i>	<i>40</i>	<i>37-43</i>
<i>Rural area during day</i>	<i>40</i>	<i>37-43</i>
<i>Rural area at night</i>	<i>35</i>	<i>32-37</i>
<i>Quiet whisper</i>	<i>30</i>	<i>27-33</i>
<i>Threshold of hearing</i>	<i>20</i>	<i>17-23</i>

Data Source: (Crocker and Kessler 1982)

Effective July 1, 2010, the State of Colorado enacted a law governing how loud **Off Highway Vehicles** (OHV) can be. To operate an OHV in Colorado, the following sound limits must be met:

- 99 dB(A) if manufactured before January 1, 1998
- 96 dB(A) if manufactured after January 1, 1998

OHVs will be tested using the SAE J 1287 stationary 20" pipe test.

New OHVs sold in Colorado cannot exceed the 96 dB(A) sound standard (unless an OHV is designed for and used in a closed-course competition facility).

The Motorcycle Industry Council (MIC) and Specialty Vehicle Institute of America (SVIA) recommend that 96 dB(A), measured by the stationary sound test procedure (SAE J1287), be adopted as the maximum sound limit for the general off-highway use of motorcycles and ATVs. The 96 dB(A) recommended maximum limit represents a significant reduction, roughly 25 percent in perceived loudness, from the 99 dB(A) limit previously recommended by MIC and SVIA.

Management Objectives

Grand Junction & Uncompahgre Field Offices RMP

Present air quality standards will be adhered to throughout the entire planning area. This is required by law.

Objectives and decisions for managing air quality are not identified in this plan.

Management Decisions

Activities and projects on public land will comply with applicable local, state, and federal air quality regulations. Mitigation to minimize air quality degradation will be incorporated into project proposals as appropriate.

Implementation Priorities

Assist other agencies in obtaining baseline air quality data.

Incorporate mitigation into any project proposal which would degrade air quality.

Support will be needed from the State of Colorado Department of Health Air Pollution Control Division, the U.S. Environmental Protection Agency, the USFS and the National Park Service.

TABLE 2.8-5 ABILITY OF CURRENT MANAGEMENT DIRECTION TO ACHIEVE DESIRED CONDITIONS

Current Planning Decision	Is management responsive to current issues? Remarks (rationale)	Options for change
Grand Junction and Uncompahgre RMPs		
<p>Present air quality standards will be adhered to throughout the entire planning area. This is required by law.</p> <p>Assist other agencies in obtaining baseline air quality data.</p> <p>Incorporate mitigation into any project proposal which would degrade air quality.</p>	<p>Yes :</p> <p>Air Resource Management conditions are currently appropriate for rural conditions, and are anticipated to remain appropriate into the future. Without, future Air Resource Management conditions are anticipated to remain appropriate.</p>	<p>BLM activities (either directly or through use authorizations) will comply with all applicable local, state, and federal air quality laws, regulations, and standards.</p> <p>The BLM will incorporate appropriate mitigation measures into all project proposals predicted to cause significant adverse air quality impacts.</p> <p>The BLM will assist in obtaining air quality data.</p>

Potential New Decisions for the D-E NCA RMP

- BLM activities (either directly or through use authorizations) will comply with all applicable local, state, and federal air quality and noise control laws, regulations, and standards.
- The BLM will incorporate appropriate mitigation measures into all project proposals predicted to cause significant adverse air quality and noise impacts.
- The BLM will assist in obtaining air quality and noise data.

Air Quality

The BLM must analyze the potential effects of BLM and BLM-authorized activities on air quality as part of the planning, environmental review, and decision-making processes.

In addition, the BLM will manage public lands in a manner that minimizes (to the extent practicable) air quality impacts from criteria hazardous air pollutants, as well as other physical or chemical contaminants with the potential to significantly harm air quality-related values (including visibility, atmospheric deposition, and impacts to flora and fauna). Site-specific requirements may be imposed where significant air quality impacts would otherwise occur.

Specific BLM requirements include:

- All BLM actions (either directly or through use authorizations) must comply with applicable air quality laws, statutes, regulations, standards, and implementation plans; and
- Within EPA-designated nonattainment and maintenance areas, the BLM will demonstrate that its actions (either directly or through use authorizations) will conform with applicable air quality requirements, before such actions are initiated.

- The BLM will apply the principle of multiple use, recognizing the need to protect air quality and atmospheric values.
- BLM activities (either directly or through use authorizations) will comply with all applicable local, state, and federal air quality laws, regulations, and standards. The BLM will incorporate appropriate mitigation measures into all project proposals predicted to cause significant adverse air quality impacts. The BLM will assist in obtaining air quality data.

Noise

Although the BLM currently has no formal goals or objectives regarding noise, noise levels generated by direct or authorized activities can conflict with the use or enjoyment of the Public Lands by authorized users or natural resource uses. Site-specific requirements may be imposed where significant noise impacts (such as to recreation areas, and wildlife habitat) would otherwise occur.

Management Opportunities

Anticipated Future Conditions

Future climate and air quality conditions could be affected by regional climate changes, as well as regional transport of fugitive dust and air pollutants. Future air quality conditions could also be affected by relatively small emission sources operating within the planning area (such as wildfire management and recreational activities), as well as continued increases in regional population growth and regional industrial activity. Discussions of these future conditions are provided in the following sections.

Natural Factors Causing Change in the Resource and Resource Use

If repeated drought (which has occurred in the past) continues, then annual precipitation would continue to be well below normal, affecting vegetation growth, water flows, and the likely increase in windblown dust and wildfires. Wildfires resulting from lightning strikes will continue to impact air quality, and could affect sensitive receptors. It is unlikely natural sources of noise would result in any significant noise impacts.

Emissions from Recreational Activity

The BLM has authority over the locations where motorized recreational activity is allowed within the Planning area. Tailpipe and fugitive dust emissions from passenger vehicles, motorcycles, and OHVs can affect air quality in the immediate vicinity of the roads, trails, and campgrounds where those vehicles operate. It is anticipated that localized air quality impacts (such as in and around camping areas) caused by individual vehicle exhaust will improve due to reduced emissions through improved technology (such as the EPA's new emissions standards for off-highway motorcycles, ATVs, and snowmobiles), although these improvements could be offset due to increased numbers of vehicles. However, increased fugitive dust from vehicle use on unpaved roads is likely to increase with increasing total vehicle numbers. Vehicular traffic, recreational use of motorized vehicles, and other vehicle use will continue to generate noise within the planning area.

Prevention of Significant Deterioration

In order to prevent areas from deteriorating up to the level of the NAAQS, the Clean Air Act lays out provisions for the Prevention of Significant Deterioration (PSD). A classification system was established that identifies the amount of additional air quality degradation (increments) allowed above legally

established baseline levels. PSD Class I areas have the greatest limitations, with little additional degradation allowed.

Mandatory federal PSD Class I areas (primarily consisting of large national parks and wilderness areas) were identified when the Clean Air Act was August 7, 1977 and cannot be redesignated. Remaining areas in the nation (outside nonattainment and maintenance areas) are designated as PSD Class II areas, where moderate deterioration and controlled growth are allowed.

The Dominguez Canyon Wilderness Area, inside D-E NCA, is classified as a Class II airshed. Class II is defined as areas of the country protected under the Clean Air Act, but is identified for somewhat less stringent protection from air pollution damage than a Class I area.

To avoid increased fugitive dust and deterioration in air quality and visibility, vegetation cover needs to be protected and/or increased. When soils are severely disturbed, vegetation cover can be reduced significantly (Adams and others, 1982; Bolling and Walker, 2000) and growth impaired (Spencer and Port, 1988; Angold 1997).

The Clean Air Act also established procedures by which PSD Class II areas could be redesignated as Class I, or as Class III (where a greater amount of deterioration would be allowed). To date, very few PSD Class II tribal lands have been redesignated as Class I, and no areas have been redesignated as Class III.

In addition to establishing PSD increments, the U.S. Congress established the National Visibility Goal of “the prevention of any future, and the remedying of any existing impairment of visibility, in mandatory class I areas which impairment results from manmade air pollution.” PSD Class I areas in and around the planning area include:

- Black Canyon of the Gunnison Wilderness Area
- Maroon Bells - Snowmass Wilderness Area
- West Elk Wilderness Area
- La Garita Wilderness Area
- Weminuche Wilderness Area
- Mesa Verde National Park
- Arches National Park
- Canyonlands National Park

Under Colorado law, the following federal PSD Class II areas (based on their boundaries as of August 7, 1977) in and around the planning area are subject to the same annual, 24-hour, and three-hour sulfur dioxide increments as those for the federal PSD Class I areas listed above:

- Black Canyon of the Gunnison National Monument (excluding the PSD Class I Wilderness Area)
- Gunnison Gorge Recreation Area (boundary as of October 27, 1977)
- Colorado National Monument
- Uncompahgre Mountain Primitive Area
- Wilson Mountain Primitive Area

As a federal land management agency, the BLM has an “affirmative responsibility to protect the air quality and related values (including visibility)” of PSD Class I areas that it administers, and to consider whether a proposed major emitting facility would have an adverse impact on those values.

Certain uses of BLM-administered public lands may require a state air quality permit. Compliance with such permits should be a term and condition of BLM authorization, including the actions necessary to determine compliance.

BLM Air Resource Management Manual

BLM Air Resource Management Manual MS-7300 sets forth the authority, policy, objectives, program structure, roles, and responsibilities for the BLM's Air Resource Management Program (including climate, climate change, air quality, visibility, smoke management, and noise). The manual addresses multiple use management responsibilities under FLPMA, and responsibilities under other authorities, including the Clean Air Act, that impact BLM management of air resources on public lands. The manual also describes the roles of the EPA, state, and local air quality regulatory agencies in addressing air resources.

The manual describes the legal authorities, management, and office responsibilities, program structures and functions, references, and a glossary of terms. Specific policies include:

General

The BLM recognizes air (air quality, climate, and climate change) as a valuable natural and public resource that needs to be protected through prudent management and appropriate mitigation. BLM activities, programs, and projects will be managed at an appropriate scale, consistent with BLM planning objectives, and in compliance with applicable laws. All BLM activities, programs, and projects will comply with applicable provisions of the Clean Air Act, FLPMA, NEPA, and other applicable air regulations, implementation plans, laws, standards, and directives.

The BLM will consult and coordinate with applicable regulatory agencies on the management of existing and future PSD increment consumption to provide for the protection of air quality, while accomplishing the BLM core mission. The BLM will coordinate, as appropriate, with federal, tribal, state, and local agencies responsible for or affected by air resource management. Coordination will occur on all appropriate resource management plans, NEPA documents, proposed rule changes affecting air quality, and revisions to state implementation plans. The BLM will develop, maintain, and/or acquire the knowledge and technical skills necessary to accomplish the objectives and adhere to the policies of the air resource management program.

Air Quality

The BLM will review its use authorizations requiring air quality permits on a periodic basis to confirm that the authorized parties possess the necessary permits and will take appropriate actions to enforce BLM permit conditions. If BLM has information pertaining to violation of Federal or state air quality laws, it will provide that information to the appropriate enforcement agency. BLM activities, projects, and programs within designated nonattainment or maintenance areas must comply with applicable general and transportation conformity regulations.

Consistent with the BLM's multiple-use mandate, BLM actions and use authorizations will comply with appropriate direction in the Clean Air Act "to preserve, protect, and enhance the air quality in national parks, national wilderness areas, national monuments, national seashores, and other areas of special national or regional natural, recreational, scenic, or historic value." The BLM will consider the potential effects of BLM projects, programs, activities, and BLM-authorized activities on air quality at both the planning and the project level. Where appropriate and geographically applicable, managers should use other Federal and State agency air quality data to aid in the analysis of BLM-authorized activities.

Visibility is an air resource value that may be affected by air quality. Where BLM activities, programs, and projects or BLM-authorized activities have the potential to impact visibility, the BLM will evaluate the extent of the potential impact and consider mitigation.

Noise

When BLM programs, projects, and/or use authorizations have the potential to affect existing resources (including public health and safety, wildlife, cultural heritage, wilderness, wildland/urban interface areas, and other special management areas), the BLM will consider noise and its potential impacts on the public and the environment, as well as any appropriate mitigation measures, during the planning and authorization review process. This is especially important when land use proposals include high volumes of motorized vehicles or mechanized equipment. However, the BLM Safety and Occupational Health Program is responsible for assessing exposure to potentially high noise-producing work operations and activities (BLM Handbook H-1112-2).

Smoke Management

BLM smoke management and planning activities will comply with applicable federal, state, and local smoke management programs, regulations and standards, and the BLM will conduct smoke management and planning activities in cooperation with regulatory agencies, other federal agencies, and Tribal governments to collectively reduce public health and welfare impacts of smoke. The BLM will plan the application of prescribed fire and wildland fire use in advance, including preparing prescribed fire burn plans and obtaining necessary air quality permits, consistent with applicable regulations and prescribed fire planning and implementation procedures guidance. The BLM will assist air quality regulatory agencies in the siting and operation of emergency episode air quality monitoring stations when necessary to assess smoke impacts from prescribed fire or wildfire.

EPA Interim Air Quality Policy on Wildland and Prescribed Fires

On May 15, 1998, the EPA established an Interim Air Quality Policy on Wildland and Prescribed Fires, which outlines how to achieve national clean air goals while enhancing the quality of wildland ecosystems by increasing the use of fires to achieve resource benefits. The EPA especially urged state air quality regulatory agencies to develop and implement at least basic smoke management programs, establishing procedures and requirements for minimizing emissions and managing smoke dispersion. In addition, the EPA intends to exercise its discretion not to redesignate an area as nonattainment if the evidence is convincing that fires managed for resource benefits caused or significantly contributed to violations of particulate matter standards.

Noise

Unlike climate and air quality, there are no national programs designed to address noise. Most noise monitoring is conducted on an ad hoc, site-specific basis, without long-term data. Key areas of interest are aircraft and highway noise in residential areas and parklands. Additional information is available at Natural Sounds (<<http://www.nature.nps.gov/naturalsounds/>>) and the non-profit Noise Pollution Clearinghouse (<<http://www.nonoise.org/>>).

Anticipated Foreseeable Condition of the Resource/Use

It is anticipated that air pollution emissions, or the noise generated from the combination of natural and management-related factors may increase significantly over past levels. Some degree of change in the level of OHV traffic for recreational use is anticipated, depending on the needs of other resources.

Regional Conditions

Emissions from existing recreational activity operating within the planning area contribute a relatively small fraction of the total regional emissions that affect air quality. Therefore, BLM actions inside D-E NCA are unlikely to significantly affect the overall regional air quality or noise conditions. However, there are indications that regional population growth and expanded industrial operations could degrade regional air quality.



2.9 Lands with Wilderness Characteristics

(outside of Dominguez Canyon Wilderness and remaining Wilderness Study Area)

Under the Federal Land Policy and Management Act of 1979, BLM is required to maintain its inventory of lands with wilderness characteristics. BLM is in the process of inventorying lands with wilderness characteristics, focusing on D-E NCA lands outside of the Dominguez Canyon Wilderness. The BLM will consider lands with wilderness characteristics identified through this inventory in the D-E NCA resource management plan.



Chapter 3 - Resource Uses

Having reviewed the resources of D-E NCA in Chapter 2, this chapter will address the **resource uses** that were identified in the NCA's designating legislation. Those uses are:

- Recreational*
- Scientific* and
- Educational resource uses*
- Livestock Grazing
- Transportation and Travel Management

The first three* resource uses are also *purposes*, as defined by the NCA's designating legislation. As a class, resources and resource uses that are designated as *purposes* of the Omnibus Act, carry extra weight in the planning process.

Livestock grazing and motorized vehicle use are *permitted* uses, insofar as they "would further the purposes for which the Conservation Area is established." Motorized recreation will be addressed in both the recreation and the transportation and travel management sections.

Resource uses in the NCA that were not identified in the designating legislation, but that will be discussed in this document include:

- Forest and Woodland Products
 - Commercial Forest Products
 - Woodland Products
 - Land Tenure
 - Land Use Authorizations

3.1 Recreation

Indicators

Recreation is one of the most highly valued uses of the D-E NCA. Visitors find a variety of recreation opportunities where they can participate in different activities in a variety of recreation settings. Activities include hiking, horseback riding, mountain biking, motorcycle and off-highway vehicle riding, recreational prospecting, rafting, kayaking, camping, hunting, wildlife watching and heritage tourism. For the purpose of the planning effort, BLM has collected recreation information through electronic road and trail counters, recreation patrol observations, Special Recreation Permit (SRP) post-use reports, geographic information system (GIS), visitor preference surveys, and focus groups. The visitor preference surveys and focus groups information was collected by different zones within the NCA. The zones used for the surveys and focus groups will be used here for the purpose of describing the current conditions of the recreation resource. (see Map 3.1-1 Management Zones below)

Area Descriptions:

Zone 1: (Area between the Gunnison River and Hwy 50)

The BLM does not have road/trail counters in this zone. As a result, the level of use is not clear. Patrol observations report numerous dispersed campsites, large fire rings, and evidence of target shooting.

Visitor survey information may not have accurately captured all the activities in this zone. Results from the on-site survey showed hiking and horseback riding as the most satisfying activity. Recreation patrols and scoping comments suggest the zone is also valued for OHV riding activities. The Old Spanish National Historic Trail is within Zone 1. There is an information kiosk outside the NCA in the UFO with information about the trail near Wells Gulch. There is no infrastructure related to the trail inside the NCA. BLM land is 17,671.4 acres. Private inholding is 54.7 acres.

Zone 2: (the Gunnison River Corridor)

The Gunnison River is valued for recreation opportunities involving river boating activities (primarily canoeing). The primary use season occurs between Memorial Day and Labor Day. The BLM estimates total river use around 4,000 visitor days. There are no permits required for private boaters. As a result, the BLM estimates private use as a percentage of commercial use. The BLM's estimate for private v. commercial use on the river is 60 percent commercial and 40 percent private. The most popular use pattern noted from recreation patrols is an overnight trip that launches at Escalante Creek and takes out at Whitewater. As a result, there is competition for and congestion at the popular campsites along the river. The most intense congestion occurs along the bench, just below the mouth of Dominguez Canyon. This is where visitors like to combine a hike up Dominguez Canyon with their river trip. Though not as popular as overnight trips, day trips are common. Visitors either launch from Escalante Creek and take out at Bridgeport, or launch from Bridgeport and take out at Whitewater.

The Whitewater launch site is managed cooperatively between Mesa County and the BLM. Mesa County owns the land, and the BLM manages the site. The Union Pacific Railroad runs along the east side of the river through the entire zone. As a result, all river traffic must cross the railroad tracks to access the river. The tracks are far enough from the river at the Escalante put-in, that boaters can drive close to the river bank to launch boats. At Bridgeport and Whitewater, boaters have to carry gear under a trestle to reach the river. The proximity of the boaters to the railroad track is one of the most important issues in the zone. The BLM and the railroad have been engaged in an effort to resolve these issues. BLM land is 12,272.4 acres. Private land is 3,559.9 acres and state land is 358.6 acres.

Zone 3: (Ninemile Hill, Cactus Park, Farmers Canyon, Gunnison Bluffs, Dominguez Campground)

As a result of this zone's proximity to the Grand Valley, this zone is valued for its close-to-home recreation opportunities. This zone provides a variety of recreation opportunities associated with both motorized and non-motorized recreation. Both bouldering and multi-pitch climbing occurs along East Creek and Hwy 141. Bouldering usually occurs on the sandstone blocks along lower East Creek and the multi-pitch climbs occur further up East Creek in Unaweep Canyon. Colorado Highway 141, which forms the northern boundary of the NCA, is designated as the Unaweep-Tabaguache Scenic Byway, which offers scenic touring opportunities. Ninemile Hill, Cactus Park and Farmers Canyon are used primarily for OHV trail-riding recreation. Cactus Park in particular is a popular staging area for OHV riders. Hikers, equestrians, and mountain bikers also use this zone. Hikers and equestrians commonly use the two-track routes within the zone for trail-based outings, or they use the zone to access the Dominguez Canyon Wilderness. The Tabaguache Trail, which crosses the zone, is popular for long-distance, point-to-point mountain bike riding. Dispersed camping occurs throughout the zone, with the heaviest concentration in Cactus Park and, during big game hunting season, along the Dominguez Road. Recreation in the western part of the zone is closely connected to recreation on the adjoining national forest lands. OHV trail-riders move across the administrative boundary from U.S Forest Service managed trails to the multiple two-track routes on BLM lands. During big game hunting season, hunters camp on BLM-administered lands and hunt on adjacent forest lands.

The BLM estimates close to 50,000 visitors use this zone annually, approximately half of all recreation use in the NCA. The BLM maintains a partnership with the Unaweep-Tabaguache Scenic Byway Association to actively manage byway resources. The BLM also maintains a partnership with the Colorado Plateau Mountain Bike Association to maintain signage along the Tabaguache Trail. BLM land is 39,631.4 acres. Private inholding is 160.5 acres.

Zone 4: (Dominguez Canyon Wilderness)

A wide variety of non-motorized, non-mechanized quiet-use recreation opportunities occur in the Dominguez Canyon Wilderness. Activities associated with these opportunities include viewing scenery, hiking, horseback riding, wildlife viewing, heritage tourism, and backpacking. There are five primary recreation access points to the wilderness (Cactus Park, Dominguez Campground/Trailhead, the Gunnison Pack Trail, the McCarty Trailhead, and the mouth of Dominguez Canyon). The BLM estimates 11,000 to 12,000 visitors annually in the wilderness. Approximately 9,000 of those visits access the wilderness at the mouth of Dominguez Canyon. As a result, the lower end of Big Dominguez Canyon receives the vast majority of the recreation use in the zone. Several factors contribute to the concentrated use at the mouth of the canyon, including the scenery, cultural resources and easy access. In 2005, the BLM built a pedestrian/equestrian bridge over the Gunnison River to resolve trespass issues with a private bridge. The enhanced access from the bridge combined with the river traffic (see Zone 2 above), has resulted in increased visitation to the lower canyon. Currently, access to the bridge from the Bridgeport Trailhead goes along the Union Pacific Railroad tracks. In an effort to improve visitor safety and work cooperatively with the Union Pacific Railroad, the BLM is analyzing an alternative trail from the parking area to the bridge.

Impacts from recreation in the lower canyon have been monitored since 2005 with a series of photo points. BLM land is 66,193.2 acres. State land is 638 acres.

Zone 5: (Escalante Canyon, mesas south of Escalante Canyon to NCA boundary, and ridges southwest of Dominguez Canyon Wilderness (Sowbelly, Tatum, Camp)

Recreation opportunities in Zone 5 are associated with heritage/scenic touring in Escalante Canyon, big game hunting, OHV riding, picnicking, swimming, and kayaking. Much of Escalante Canyon is privately owned. As a result there is little public access off the main county road. The primary recreation activity in the lower part of the canyon is scenic touring. Above the confluence with the Dry Fork of Escalante Creek, there are two historic structures on Colorado Division of Wildlife lands. Both structures provide visitors opportunities for heritage experiences. The BLM has partnered with CDOW at one site to build a picnic area to accommodate visitors. The Potholes of Escalante canyon attract day-use visitors for picnicking and swimming. During the spring run-off, kayakers are attracted to the Potholes to run the Class IV rapids. Recreation on the mesas south of Escalante Canyon is not well understood. BLM does not have road/trail counters in the area, and as a result, does not have a good understanding of overall use numbers. Recreation patrol observations suggest the area is used primarily by OHV riders on the numerous two-track routes. In the higher elevations, big game hunting is the primary activity. The area north of Escalante Creek, southwest of the wilderness, is highly valued and most heavily used during big game hunting season. BLM land is 73,800.1 acres. Private inholding is 3,084.4 acres. State land is 968.3 acres.

Recreation Setting Characteristics (RSCs):

RSCs are the qualities of the landscape in which recreation activities occur. They describe the natural qualities of the landscape (physical), the qualities associated with patterns and levels of use (social), and the qualities created through management actions (operational). Recreation planning assumes the outcomes of recreation are related to these settings (i.e. outcomes can vary as a result of changing RSCCs). Recreation settings are described in a continuum from primitive to urban, using attributes of the physical, social, and operational settings. See Table 3.1-1 Recreation Setting Characteristics Matrix.

TABLE 3.1-1 RECREATION SETTING CHARACTERISTICS MATRIX

RECREATION SETTING CHARACTERISTICS MATRIX

PHYSICAL - Qualities of the Landscape

	Primitive	Back Country	Middle Country	Front Country	Rural	Urban
Remoteness (approx. distance from routes)						
Naturalness (modifications to landscape)						
Visitor Facilities						

SOCIAL - Qualities Associated with Use

	Primitive	Back Country	Middle Country	Front Country	Rural	Urban
Contacts (avg. with any other group)						
Group Size (average - other than you own)						
Evidence of Use						

OPERATIONAL - Conditions Created by Management and Controls over Recreation Use

	Primitive	Back Country	Middle Country	Front Country	Rural	Urban
Access (types of travel allowed)						
Visitor Services (and info)						
Management Controls						

**See attached recreation setting matrix for detail*

Table 3.1-2 RECREATION SETTING CHARACTERISTICS MATRIX

01/24/2011

PHYSICAL - Qualities of the Landscape

	Primitive	Back Country	Middle Country	Front Country	Rural	Urban
Remoteness (approx. distance from routes)	More than ½ mile from any kind of a man-made trail	More than ½ mile from any kind of a man-made ATV or full-sized vehicle route	More than ½ mile from improved gravel roads	More than ½ mile from paved roads and railroad tracks.	More than ½ mile from municipal streets or roads within towns or cities.	Municipal street and roads within towns or cities.
Naturalness (modifications to the landscape)	Undisturbed natural landscape.	Natural landscape with any modifications in harmony with surroundings and not visually obvious or evident (e.g. stock ponds, trails).	Character of the natural landscape retained. A few modifications contrast with character of the landscape (e.g. fences, primitive roads).	Character of the natural landscape partially modified but none overpower natural landscape (e.g. roads, structures, utilities).	Character of the natural landscape considerably modified (agriculture, residential or industrial).	Urbanized developments dominate landscape.
Visitor Facilities	No structures. Foot/horse trails only.	Developed trails made mostly of native materials such as log bridges. Structures are rare and isolated.	Maintained and marked trails, simple trailhead developments and basic toilets.	Rustic facilities such as campsites, restrooms, trailheads, and interpretive displays.	Modern facilities such as campgrounds, group shelters, boat launches, and occasional exhibits.	Elaborate full-service facilities such as laundry, restaurants, and groceries.

SOCIAL - Qualities Associated with Use

	Primitive	Back Country	Middle Country	Front Country	Rural	Urban
Contacts (avg. with any other group)	Fewer than 3 encounters/day at camp sites and fewer than 6 encounters/day on travel routes.	3-6 encounters/day off travel routes (e.g., campsites) and 7-15 encounters/day on travel routes.	7-14 encounters/day off travel routes (e.g., staging areas) and 15-29 encounters/ day en route	15-29 encounters/day off travel routes (e.g., campgrounds) and 30 or more encounters/day in route.	People seem to be generally everywhere.	Busy place with other people constantly in view.
Group Size (average - other than you own)	Fewer than or equal to 3 people per group.	4-6 people per group.	7-12 people per group	13-25 people per group.	26-50 people per group.	Greater than 50 people per group.
Evidence of Use	No alteration of the natural terrain. Footprints only observed. Sounds of people rare.	Areas of alteration uncommon. Little surface vegetation wear observed. Sounds of people infrequent.	Small areas of alteration. Surface vegetation showing wear with some bare soils. Sounds of people occasionally heard.	Small areas of alteration prevalent. Surface vegetation gone with compacted soils observed. Sounds of people regularly heard.	A few large areas of alteration. Surface vegetation absent with hardened soils. Sounds of people frequently heard.	Large areas of alteration prevalent. Some erosion. Constantly hear people.

OPERATIONAL - Conditions Created by Management and Controls over Recreation Use

	Primitive	Back Country	Middle Country	Front Country	Rural	Urban
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Access (types of travel allowed)	All travel is restricted to foot and horse travel.	Mountain bikes and perhaps other mechanized use, but all is non-motorized.	Four-wheel drives, all-terrain vehicles, dirt bikes, or snowmobiles in addition to non-motorized, mechanized use.	Two-wheel drive vehicles predominant, but also four wheel drives and non-motorized, mechanized use.	Ordinary highway auto and truck traffic is characteristic.	Wide variety of street vehicles and highway traffic is ever-present.
Visitor Services (and info)	None is available. Staff rarely present.	Basic maps, staff infrequently present (e.g. seasonally, high use periods) to provide on-site assistance	Area brochures and maps, staff occasionally (e.g. most weekends) present to provide on-site assistance.	Information materials describe recreation areas & activities, staff periodically present (e.g. weekdays & weekends).	Information described to the left, plus experience and benefit descriptions, staff regularly present (e.g. almost daily).	Information described to the left, plus regularly scheduled on-site outdoor demonstrations and clinics.
Management Controls	No visitor regulations or ethics signing on-site. No use restrictions.	Basic user regulations at key access points. Minimum use restrictions	Some regulatory and ethics signing. Moderate use restrictions. (e.g. camping, human waste).	Rules, regulations and ethics clearly posted. Use restrictions, limitations and/or closures.	Regulations strict and ethics prominent. Use may be limited by permit, reservation, etc.	Enforcement in addition to rules to reduce conflicts, hazards, and resource damage.

Current Setting Conditions:

The remoteness attribute in the physical setting and the access attribute in the operational setting can both be mapped. (see attached Setting Map 1 and 2) The other setting attributes are more qualitative and do not lend themselves easily to mapping; therefore, a discussion of the other attributes by zone will be used to describe the RSCs in the NCA.

Zone 1:

The naturalness attribute in Zone 1 is classified as Back Country – Middle Country. There are range improvements in the zone, including catchments, ponds and fences. None of the improvements significantly contrast with the surrounding landscape. There are numerous routes in the zone. Combined, the routes create a moderate level of contrast with the landscape. However, the character of the landscape has been retained.

The visitor facilities attribute in the zone is classified as Back Country. There are a few signs in the zone, no information kiosks, and no developed facilities (parking areas, toilets, etc.). All the routes, with the exception of maintained county roads, were created to provide access for other resource programs or user-created.

The BLM has little information about the number of visitors in the zone. As a result, both the social attributes of contacts and group size is unknown. Recreation patrols suggest both can be described as Back Country.

Evidence of use in the zone is somewhere between Back Country and Middle Country. There are few visitors in the area, so the sounds of people are seldom heard; however there are numerous dispersed campsites with fire rings and parking areas. Evidence of target shooting, off-route vehicle travel, and trash dumping are associated with these numerous campsites.

The visitor services and management controls in the zone are classified as Primitive. There are no maps available for the zone and recreation patrols are rare. Other than the travel restriction of limiting travel to existing road and trails, there are no specific recreation restrictions on use.

Zone 2:

The naturalness in the zone is classified between Front Country and Rural. The railroad is adjacent to the river through the entire zone. There are numerous private parcels along the river with buildings and agricultural development. Two county roads connect the zone to Hwy 50. Combined, these developments create a moderate contrast with the natural landscape.

The visitor facilities attribute in the zone is classified as Middle Country. BLM provides portable toilets at Escalante Creek and at Bridgeport during the boating season. The county access at Whitewater has a concrete vault toilet. The boat ramps at Escalante, Bridgeport and Whitewater are all natural surface. There are kiosks and bulletin boards at the river access points with visitor information.

The contact attribute is either Back Country or Middle Country for the zone. On weekdays, the setting is Back Country. During weekends the setting changes to Middle Country. The exception is the setting around the mouth of Dominguez Canyon. As stated above, the combination of walk-in traffic across the Bridgeport Bridge and the concentration of camping creates a very congested social setting at the mouth of the canyon. During busy weekends, the contact setting attribute could reach rural setting levels.

Generally, the group size attribute ranges between Middle Country to Front Country. Like the contact attribute, there is a difference between weekday use and weekend use. There are generally smaller groups during the week and larger groups on the weekend.

The visitor service attribute is classified as Front Country during the boating season. There are kiosks at the river access points that provide visitors basic information about the river and the visitor use restrictions. The BLM conducts regular recreation patrols throughout the boating season, including a weekly patrol to the mouth of Dominguez Canyon.

The management control attribute is classified as Middle Country. There are is a group size limit for commercial outfitters. Permits administered out of the GJFO limit commercial trips to 25 plus guides, and permits issued out of the UFO limit commercial trips to 25, including guides. (This inconsistency will be addressed in the planning process.) Commercial permits also limit the number of groups a company can have camped at the mouth of Dominguez Canyon to two per night. Private boaters are required to carry and use portable toilet systems and fire pans to pack out solid human waste and fire ash. The UFO published supplementary rules for conduct at the Escalante put-in.

At the Escalante Put-In it is unlawful to:

- Overnight camp
- Cut live or dead trees
- Collect firewood
- Burn wood fires
- Discharge firearms, including target shooting/paintball weapons
- Fail to keep the site free of all litter, trash, and debris during occupancy of the site and failure to remove all personal equipment and clean the site before departure.

Zone 3:

The naturalness attribute for the zone varies across the zone. Ninemile Hill and Cactus Park are classified as Front Country due to the high concentration of routes, the proximity to Hwy 141, private property development, and the communication facility at the top of Ninemile Hill. Combined, these create a partially modified landscape. The Gunnison Slopes area between Cactus Park and the Gunnison River is classified as Primitive. The landscape in this area is generally undisturbed. The area west of Cactus Park extending to the forest boundary is classified as Middle Country. There are numerous routes, range improvements and vegetation manipulations (chaining and rollerchopping) that create limited contrast with the natural landscape. Overall, these contrasts are minor.

Like naturalness, there is a wide variety in the visitor facilities in the zone. Overall, the zone is classified as Middle Country. As stated above, BLM recently constructed vault toilets at two locations in Cactus Park. Both sites include parking areas. The Dominguez Campground is within this zone. The campground provides vault toilets, picnic tables, fire rings, and parking areas. There are signs throughout the zone that provide limited guidance to visitors.

The contact attribute for the zone is classified as Backcountry to Middle Country based on responses to survey questions.

The group size attribute for the zone is classified as Backcountry (average of 3.1 people per group) based on responses to survey questions.

Like the naturalness attribute, the evidence of use attribute varies across the zone. Those areas with more use (Cactus Park, Ninemile Hill, and Farmers Canyon) are classified as Middle Country. Since most

visitors to these areas are participating in OHV riding, other visitors can be heard. There are numerous dispersed camp sites in these areas. Evidence of target shooting, off-route vehicle travel, and trash are associated with these campsites. In other areas of the zone like the Gunnison Bluffs, there is little or no evidence of use. This area of the zone is classified as primitive.

The visitor services attribute is classified as Back Country. There is basic information available in Cactus Park and at the Dominguez Campground. There are directional signs to help visitors traveling through the zone, signs indicating the Dominguez Canyon Wilderness Boundary, and signs delineating the Tabaguache Trail. Recreation patrols are infrequent.

The management control attribute for the zone is classified as Back Country. The travel management restriction of limited to existing roads and trails is posted at the major access points. The exception to the Back Country classification is at the Dominguez Campground where the developed recreation site restrictions apply:

Developed Site Rule of Conduct:

It is unlawful to:

- Use water supply facilities for cleaning fish, game, or other materials.
- Deposit human waste except in toilet or sewage facilities.
- Operate audio device, or other noise producing device or motorized equipment in a manner that makes unreasonable noise.
- Operate or use a public address system
- Construct or use an antenna or aerial (other than on a vehicle or as an integral part of such equipment)
- Build fire except in a stove, grill, fireplace or ring provided for such use
- Enter or remain in campgrounds at night when not occupant or visitor
- Enter or use a site or a portion of a site closed to public use.
- Occupy a site with more persons than permitted.
- Move any table, stove, barrier, litter receptacle or other campground equipment.
- Discharge fireworks or Firearms or weapons
- To have unattended property in day use area for more than 24 hours, or for more than 72 hours in other areas.
- To operate vehicle in portions of recreation sites closed to such use.
- To have animals in swimming area (except Seeing Eye dog or Service dog)

In a developed site:

- Animals must be under restrictive control
- Camping equipment only in designated campsite in designated place. (pitch any tent, park any trailer, erect any shelter)

Zone 4:

The naturalness attribute is classified as Primitive – Back Country with the exception of the Rambo homestead. There are few modifications within the Dominguez Canyon Wilderness. Modifications include stock ponds fences and trails. All these modifications result in little to no contrast with the

natural landscape. The Rambo homestead does create a noticeable contrast with the landscape. That said, the contrast is limited to a small area, 5 – 10 acres.

The visitor facility attribute is classified as Primitive. There are no developments or improvements to the trails inside the wilderness.

The social setting attributes of number of contacts and groups size vary. In the area between the confluence of the Dry Fork and the mouth of Dominguez Canyon these attributes range from Back Country to Front Country. As noted in the Zone 2 discussion, there is intensive use of the river campsites at the mouth of Dominguez Canyon. Most of the river traffic that camps at the mouth of the canyon also hikes up the lower part of Big Dominguez Creek to see the petroglyphs and the waterfall. Day-use hikers and equestrians use the Bridgeport Bridge to access the lower part of the canyon. Combined, these two groups of users can result in frequent contacts and what seems like large groups. As noted in the Zone 2 discussion, there are more people in the canyon on weekends than during the week. Outside the lower part of the canyon, both the number of contacts and the group size attributes are classified as Primitive.

The evidence of use attribute is classified as Primitive to Back Country. The trail in the lower part of the canyon and the social trails around the petroglyphs and the waterfall are well defined. Outside these areas, there are few signs of human activity.

The visitor services attribute is classified as primitive for the entire zone. All visitor services for the zone are delivered outside the zone. This includes kiosks with maps and information about the wilderness and a brochure that can be obtained online or at the BLM offices.

The management controls attribute is classified as Front Country. The wilderness is closed to motorized and mechanized use. Rules are clearly posted on the kiosk and in the brochure.

Zone 5:

Like Zone 3, the naturalness attribute for this zone varies. The Escalante Canyon corridor is classified as Front Country to Rural due to the agricultural development on private land throughout the canyon. The Wagon Park area and the Sawmill Mesa/Dry Mesa areas are classified as Middle Country. These areas have numerous routes and areas that have been chained or rollerchopped. The areas south and west of the Dominguez Canyon Wilderness in Palmer Gulch and along Camp Ridge, along with Cottonwood Creek, are classified as Back Country. There are routes in these areas; however, the impact to the natural landscape is minor and not evident.

With the exception of the Potholes Recreation Site, the visitor facilities attribute for the zone is Primitive to Back Country. There are a few directional signs and a few boundary signs along the wilderness boundary. Otherwise there are no visitor services. The Potholes Recreation site has visitor information kiosks, picnic tables, a vault toilet and shade structures.

The BLM has little information about the number of visitors in the zone. As a result, both the social attributes of contacts and group size is unknown. Recreation patrols suggest both can be described as Back Country. The exception to this classification is at the Potholes Recreation Site, where use is concentrated and visitors could expect to see more than 5 - 10 other groups on busy weekends.

The evidence of use classification is generally Back Country to Middle Country. There are numerous dispersed campsites where vegetation has been worn, campfire debris is present and trash has been left.

With the exception of the Potholes Recreation Site, the visitor service attribute is classified as Primitive – Back Country. As mentioned above, there are a few signs to help visitors. Recreation patrols are infrequent in the zone.

With the exception of the Potholes Recreation Site, the management controls attribute is classified as Primitive to Back Country. Motorized travel is limited to existing roads and trails. These rules are posted a few access points. The restrictions at the Pothole Recreation Site include those listed above in Zone 3 for the Dominguez Campground. Additionally, use restrictions around the Potholes Recreation Site and the Escalante Area of Critical Environmental Concern around the Potholes site include:

It is unlawful to:

- Camp outside designated campsites
- Cut live or dead trees
- Burn materials containing nails or metal or hardware, etc.
- Fail to keep sites free of all litter, trash, and debris during occupancy of a site and failure to remove all personal equipment and clean site upon departure
- Dive/jump from rocks, shore or any other means into the water
- Discharge firearms of any kind, including those used for target shooting or paintball weapons
- Possess glass container

Specific to the Potholes Recreation Site it is unlawful to:

- Exhibit public nudity
- Burn wood fires

Special Recreation Permits (SRPs):

The BLM issues SRPs to achieve recreation management objectives. Currently, no new SRPs are being issued in the NCA. The following table summarizes existing SRPs in the NCA:

TABLE 3.1-3 SPECIAL RECREATION PERMITS

Permittee	Zone	Permitted Activity	Annual Use in the NCA (user days)
Adaptive Sports	2	River Trips (disabled)	30
Avid 4 Adventure	2	River Trips	117
Backcountry Outfitter	All	Lion Hunting	No locations reported
Biggerstaff Guide & Outfitters	GJFO All	Lion Hunting	No locations reported
Bookcliff Outfitters	UFO All	Lion Hunting	2 hunters reported; no locations reported

Canyon Passages	2	River Trips	450
Cat Track Outfitters	All	Lion Hunting	No use reported in GMU 62 since 2005
Catfish Canoe	2	Equipment Rental, Shuttles	183
Centennial Canoe	2	River Trips	1,474
Chuck Davies Guide & Outfitter	GJFO All	Big Game and Lion Hunting	1 user day in GMU 62
Colorado Alpine and Desert Adventure	3 & 4	Climbing and Canyoneering	7
Colorado Backcountry Biker	3	Mountain bike tours and huts	185
Community United Methodist Church – Boy Scouts	?	Mountain bike event	24
Dream West Adventures	2	River Trips	100
Dvorak’s Kayaks and Rafting Expeditions	2	River Trips	35
Gunnison River Expeditions	2	River Trips	150
Gunsmoke Outfitters	UFO All	Lion Hunting	No use in GMU 62
J & D Outfitters and Guide Service	UFO	Big Game Hunting	No use in NCA
Keys Guide & Outfitting	2, 4	Big Game & Waterfowl Hunting, river trips, backpacking	6 user days for river trips
Mesa County Sheriff’s Posse	1	Equestrian Event	40
Needle Rock Outfitters	UFO ?	Big Game and Lion Hunting	No trip log on file
Noah’s Ark Whitewater Rafting	2	River Trips	34
Ridgeway Independent Guide Service	2	River Trips	30
Rimrock Adventures	2	River Trips	4
Scenic River Tours	2	River Trips	15

Telluride Kayak School	2	Kayak Instruction	10
Western State College	2	River Trips	10
Women's Surface Creek Saddle Club	?	Equestrian Event	100

Additionally, there are two US Forest Service Special Use Permits that authorize incidental use on BLM lands. One permit authorizes big game hunting services. The other permit authorizes hiking and photography. Due to post-use reporting by permittees, actual use in the NCA is unknown. That said, the FS permit administrator estimates fewer than 20 user days between the two permits.

Regional Recreation Supply:

Other outdoor recreation providers near the NCA include the BLM, US Forest Service, the National Park Service, and Colorado State Parks. The BLM manages recreation in the Uncompahgre Field Office (UFO) and the Grand Junction Field Office (GJFO). Both field offices are currently revising their Resource Management Plans. The GJFO currently manages two Special Recreation Management Areas, Bangs Canyon and North Fruita Desert. The Bangs Canyon SRMA borders the NCA on the north side of Hwy 141. Both SRMAs provide structured opportunities for trail-based recreation, including nationally recognized mountain bike trail systems. Outside the SRMAs, recreation is managed to provide activity opportunities based on BLM's multiple use mandate (i.e. recreation is only one of the uses on the landscape, and is managed in concert with other uses). Most of the GJFO lands are within 10 miles of the population of the Grand Valley. As the population increases, demands on the BLM public lands increases. Over time, recreation settings have changed due to both increased recreation use and other public lands uses (energy development, rights-of-ways, etc.).

The UFO currently manages two SRMAs, the San Miguel River SRMA and the Dolores River SRMA. Both SRMAs are located on the west slope of the Uncompahgre Plateau. Like the GJFO, the BLM lands in the UFO have experienced pressures as a result of increased populations in the Gunnison and Uncompahgre Valleys. The UFO recently completed the Dry Creek Travel Management Plan, affecting public lands adjacent to the southern boundary of the NCA. The travel management plan restricted motorized and mechanized use to designated roads and trails.

The BLM also manages two NCAs other than the D-E NCA. The McInnis Canyon NCA, managed out of the GJFO, and Gunnison Gorge NCA, managed out of the UFO. Both protect structured recreation opportunities. Like the D-E NCA, both have designated wilderness.

Regionally, the US Forest Service provides recreation opportunities on the Grand Mesa and Uncompahgre national forests. The D-E NCA's western boundary is adjacent to the Uncompahgre National Forest (UNF). Current recreation management on the UNF is focused on travel management decisions. Access to different areas of the forest for different users shapes the range of recreation opportunities. In areas where routes are closed to motorized use, there are opportunities for quiet use. Through these travel decisions and a strong partnerships with motorized user groups like the Western Slope ATV Association, an extensive motorized trail system has been developed on the north end of the forest, adjacent to Zone 3. The other dominant recreation use on the UNF is big game hunting. From late August through November, the forest experiences intensive use. Due to the good condition of the Divide Road, the main access road to the forest, many hunters use trailer campers. The result is a

dramatic change in the setting. Large camps can have as many as ten fifth-wheel camp trailers. This use pattern includes NCA lands along the Dominguez Road, where smaller trailer camps are present throughout the big game hunting seasons.

There are two National Park Service units within an hour drive of the NCA -- Colorado National Monument and the Black Canyon of the Gunnison National Park. The Colorado National Monument is adjacent to the McClinnis Canyons NCA and the Black Canyon of the Gunnison National Park is adjacent to the Gunnison Gorge NCA. Both units offer traditional recreation opportunities -- hiking, scenic touring, and interpretation. Entrance and camping fees are charged at both areas.

Colorado State Parks manages several parks within an hour drive of the NCA -- Colorado River, Highline Lake, Swietzer Lake, Crawford, and Ridgeway. All these park units offer developed, structured recreation opportunities for a variety of activities, including, but not limited to camping, picnicking, fishing, and swimming. Entrances and camping fees are charged at all these parks.

Combined, these public lands offer residents of local communities outstanding outdoor recreation close to home. In addition to the benefit of living in a community close to these public land opportunities, the recreation on these public lands provide the local community economic value through tourism dollars. As noted above, the mountain bike trails in the GJFO are nationally known. In addition to the GJFO trails, the MCNCA has nationally known mountain bike trails; the Gunnison River through the GGNCA is nationally known for cold-water fishing; Colorado, in general, is nationally known for elk hunting; and the two NPS units draw visitors from the national market. To service these public land visitors, both local and national, a recreation service provider sector has emerged in the local communities. Recreation services including lodging, food, gear, and guide services can be found in all the local communities.

Recreation Demand:

The BLM recreation planning process assumes individuals participate in outdoor recreation because participation improves the quality of life for the participant. The planning process further assumes recreation participation results in improved conditions for local communities (social, economic, and political) and improved condition for the environment. Combined, these improved conditions for individuals, communities and the environment are referred to as recreation outcomes. This planning process requires a more in-depth understanding of not only activity preferences, but also recreation setting preferences, and visitor and community outcome preferences to better describe the recreation demand.

To understand the relationships between activities, recreation settings, and recreation outcomes, the BLM worked with the Natural Resource and Land Policy Institute (NRLPI) at Mesa State College. The NRLPI conducted visitor preference surveys and focus groups that gathered information relevant to the assumptions in the BLM planning process. A complete report will be available as an attachment to the Draft RMP.

The information from the surveys and the focus groups should not be construed as definitive or completely quantitative. Time and resources did not allow for the development of a study method that would produce more definitive data. That said, the information collected by the NRLPI gives the BLM a better understanding of recreation in the NCA and sheds light on management opportunities to protect the quality of life outcomes associated with that recreation.

The surveys gathered information from on-site recreation participants. Survey questions were designed to understand not only what recreation activities were occurring (activity), but also who is recreating in

the NCA and why they are recreating (outcomes or results), and what they want protected (recreation settings).

As a first step in analyzing the survey data, the NRLPI looked at what outcomes are valued. Using the results of this analysis, the data was further analyzed to determine the types of activities visitors participated in. Finally, the data was analyzed to determine what recreation settings visitors wanted protected.

To answer the questions of who is recreating and why they are recreating (outcomes), the data was used to group respondents into “bundles” based on individual responses to question about preferences for experiences and personal, community, and environmental benefits. The professional judgment of BLM outdoor recreation planners was used to determine which questions would be used to create these different visitor profiles.

Descriptions of the different bundles:

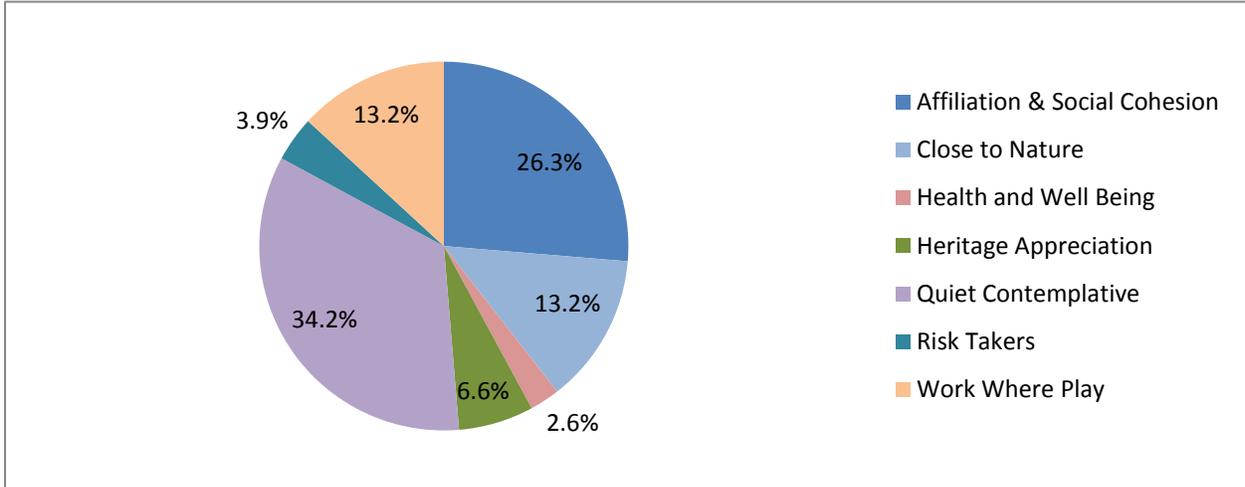
1. **Quiet Contemplative** – This bundle values the experiences of enjoying solitude and contemplative time. They value the results of reduced stress, time alone, and preservation of unique landscapes.
2. **Health and Well-Being** – This bundle values the experiences of developing skills, getting needed exercise, and having access to frequent outdoor physical activity. They value the results of improved physical and mental condition, improved sense of control over their lives, and reduced community health costs.
3. **Risk Taking and Skills Challenge** – This bundle values the experiences of developing skills and abilities, testing endurance and equipment, and enjoying risk-taking adventure. They value the results of improved self-confidence, improved outdoor skills, and improved self-reliance.
4. **Affiliation & Social Cohesion** – This bundle values the experiences of enjoying time with family and friends and recreating with others that enjoy the same things. They value the results of developing stronger ties with family and friends, greater involvement in recreation and other land use decisions, and improved community ownership of recreation resources.
5. **Closer to Nature** – This bundle values the experiences of being in the natural surroundings, enjoying solitude, and enjoying the aesthetics of nature. They value the results of improved knowledge of the outdoors, a closer relationship with the natural world, and increased protection of natural landscapes and resources.
6. **Heritage Appreciation** – This bundle values the experiences of learning more about the history and the natural landscape. They value the results of improved appreciation of the area’s cultural history, greater awareness of this community as a special place, and increased sustainability of the community’s cultural heritage.
7. **Work where I can Play More Outdoors** – This bundle values the experience of enjoying frequent access to outdoor recreation. They value the results of living a more outdoor-oriented lifestyle,

greater awareness of this community as a special place, and an improved balance between work and play.

Using this bundling approach, the results of the survey showed there are predominately two types of visitors looking for different types of outcomes, Quiet Contemplative and Affiliation & Social Cohesion.

Overall distribution of the bundles in the NCA:

CHART 3.1-I BUNDLE DISTRIBUTION

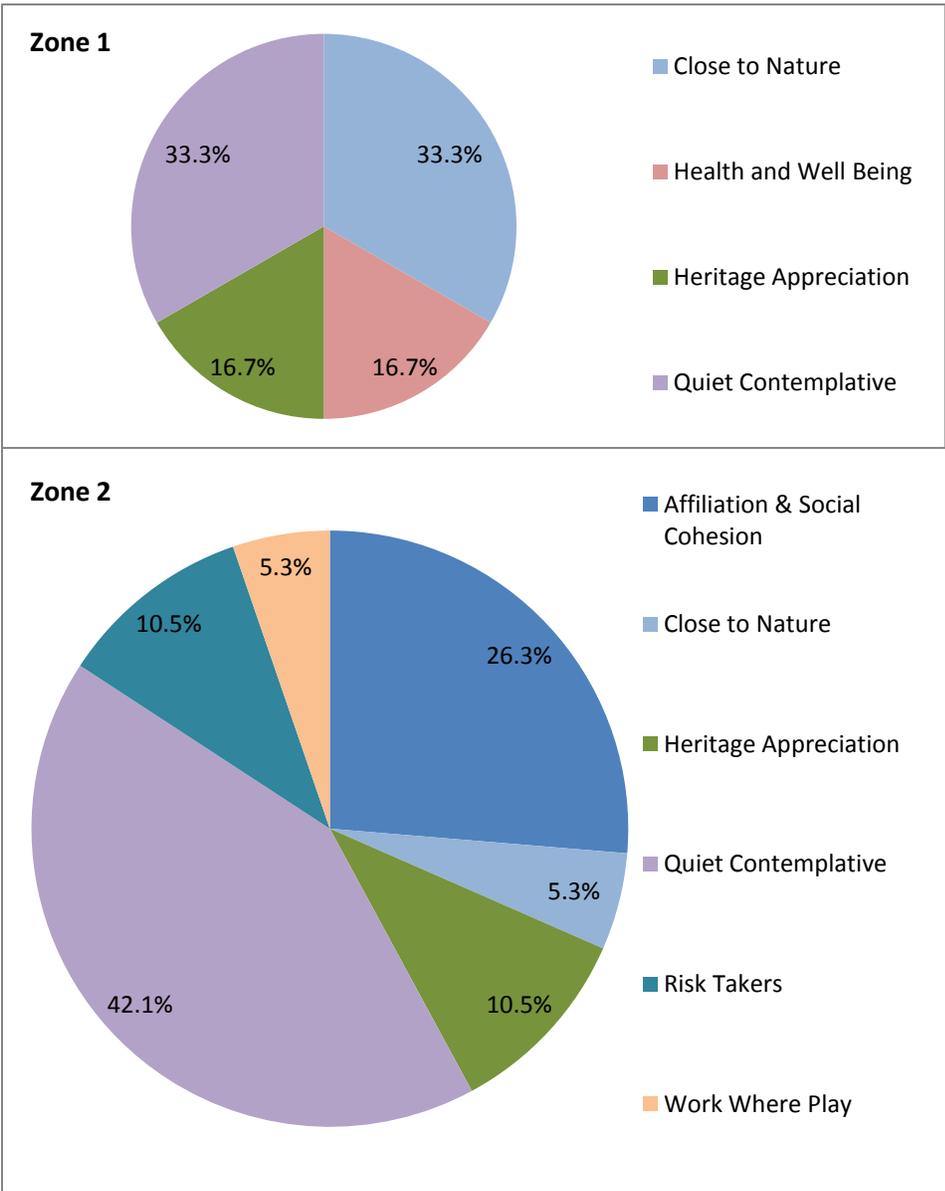


The data was further analyzed to determine how these different bundles are geographically distributed throughout the NCA. See Table 3.1-4 Values by Geographic Zones

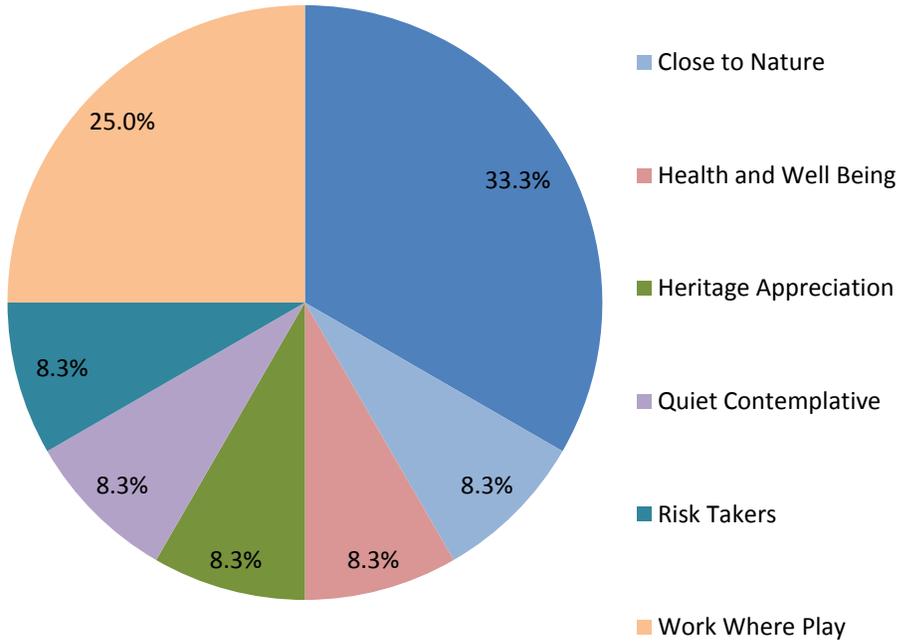
TABLE 3.1-4 VALUES BY GEOGRAPHIC ZONES

Zones	Top Values
Zone 1	Quiet Contemplative & Close to Nature
Zone 2	Quiet Contemplative, Affiliation & Social Cohesion
Zone 3	Affiliation & Social Cohesion and Work where I can Play More Outdoors
Zone 4	Quiet Contemplative and Affiliation & Social Cohesion
Zone 5	Affiliation & Social Cohesion and Work where I can Play More Outdoors
NCA Overall	Quiet Contemplative and Affiliation & Social Cohesion

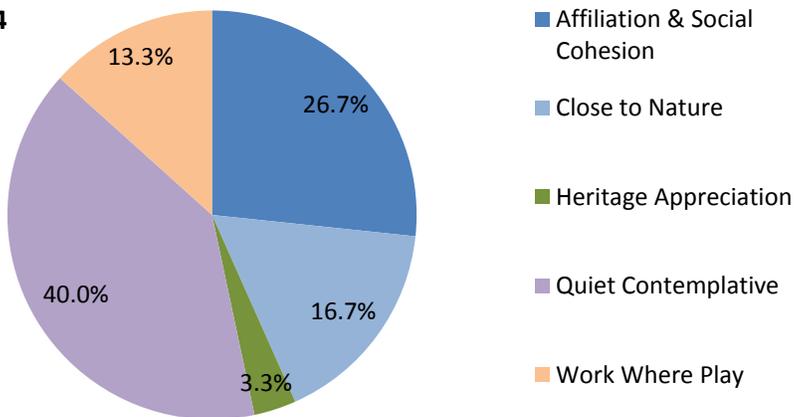
CHART 3.1-2 BUNDLE DISTRIBUTION BY ZONE

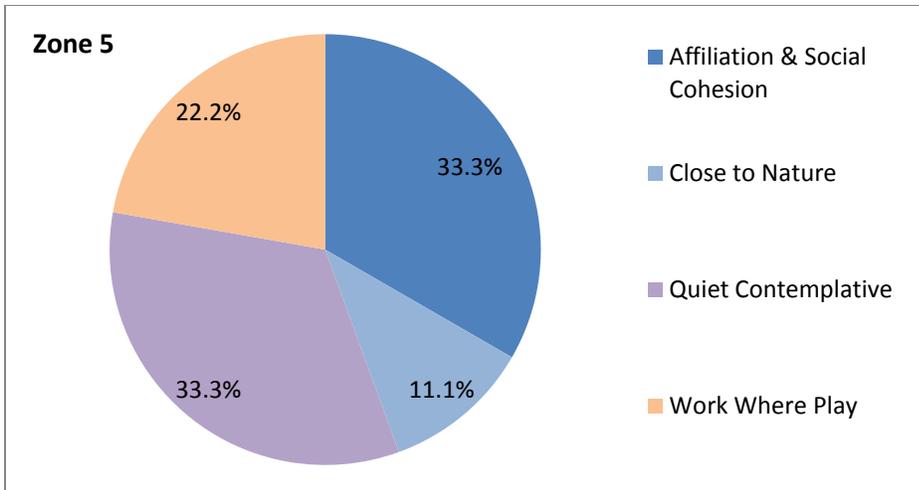


Zone 3



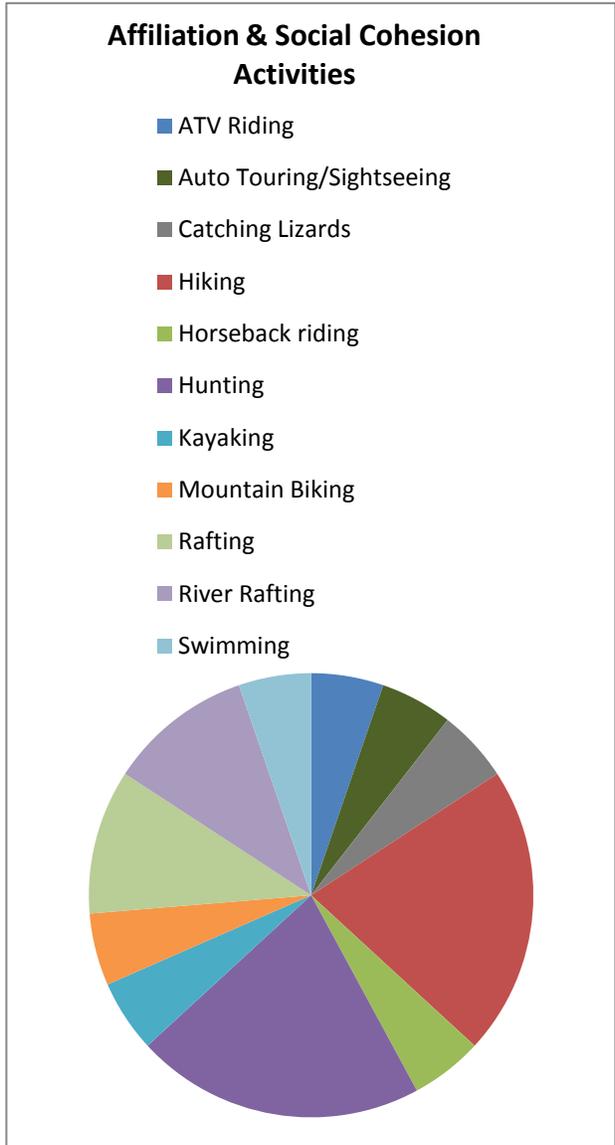
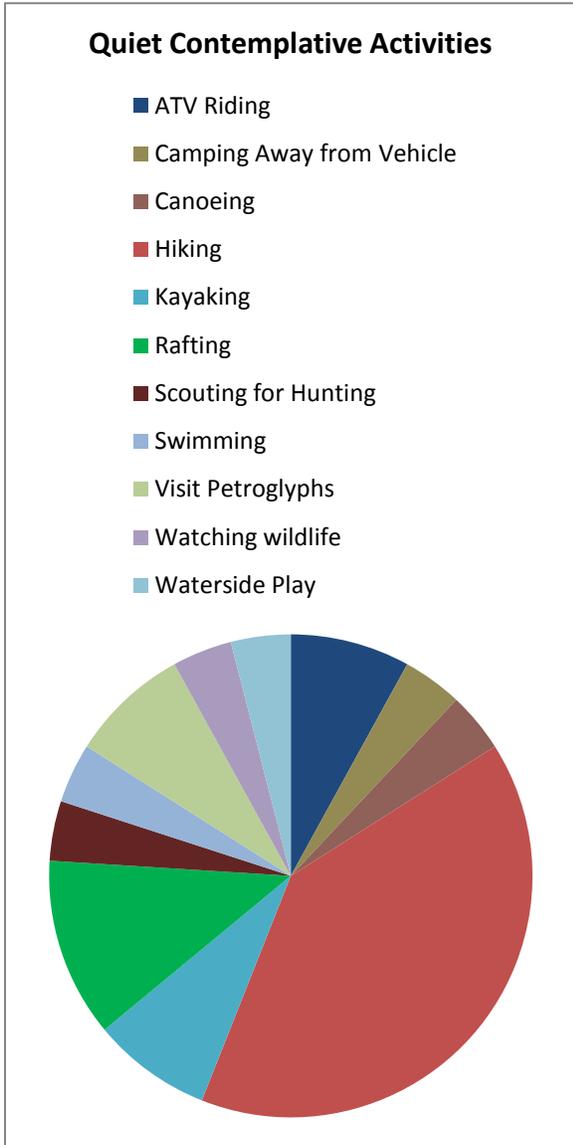
Zone 4

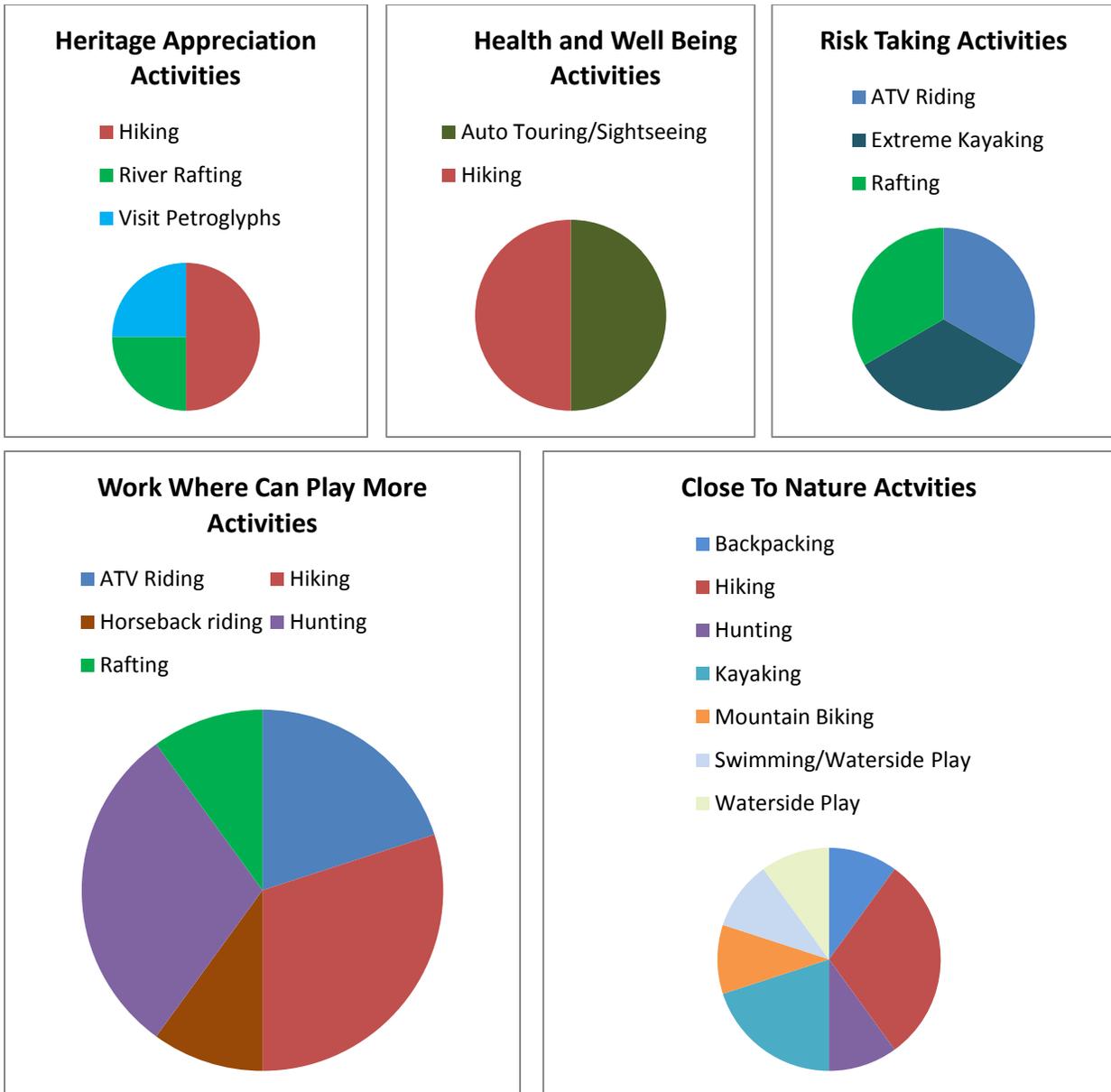




Using the results of the bundling method, the survey data was analyzed to determine what activities are important to each of these different bundles. It is important to note the intercept points for the survey and the difficulty of soliciting participation of certain activity participants may have resulted in representation of certain types of activities over others. That said, the results do suggest the outcome results of recreation can be achieved through a variety of activities.

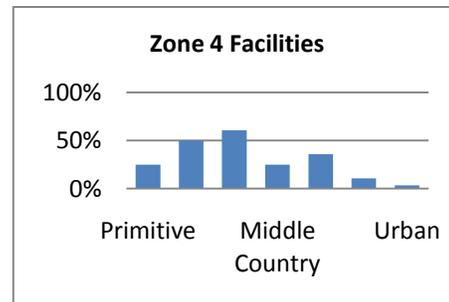
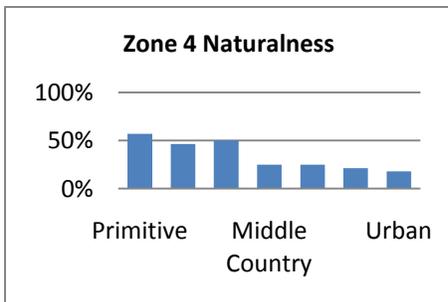
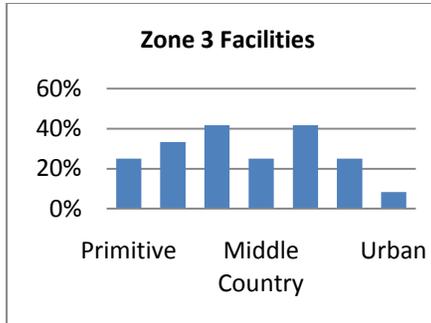
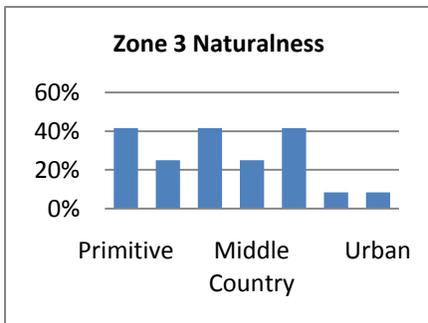
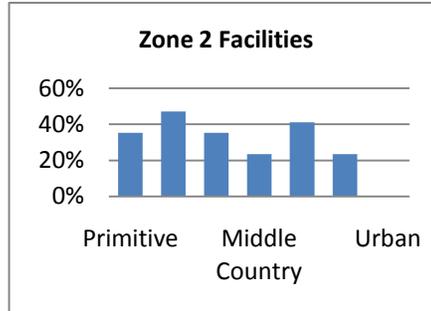
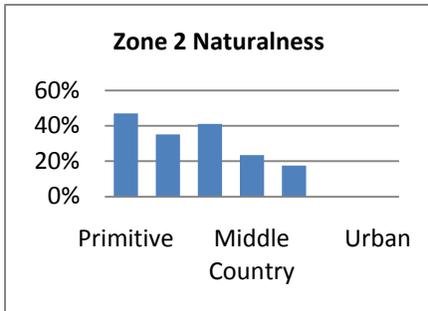
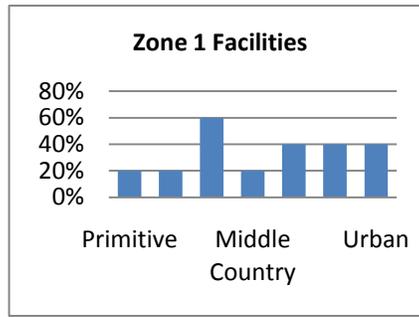
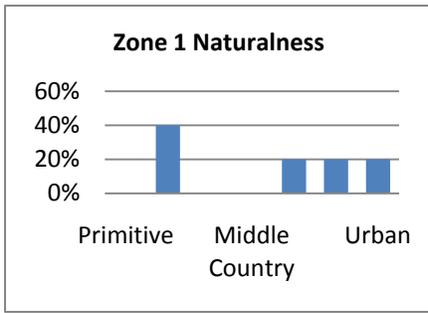
CHART 3.1-3 NICHE BUNDLE DESCRIPTIONS





To better understand what these on-site visitors want protected, the survey asked a series of questions about Recreation Setting Characteristics. As stated above, the recreation settings are closely related to the types of outcome results achieved from recreation. Generally, the results suggest more Primitive to Middle Country settings are needed to support recreation opportunities. The exceptions to this pattern are in Zones 1 and 3, where a more Middle Country/Front Country setting is needed for visitor facilities; and in Zones 2, 4, and 5 a more Middle Country/Front Country setting is needed for management controls.

CHART 3.1-4 PHYSICAL SETTING ATTRIBUTES TO BE PROTECTED:



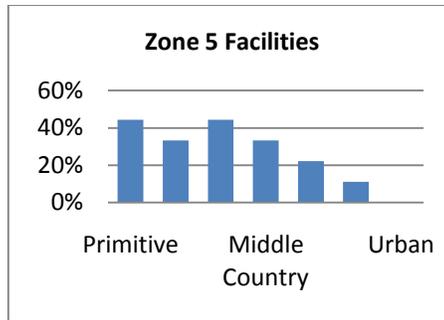
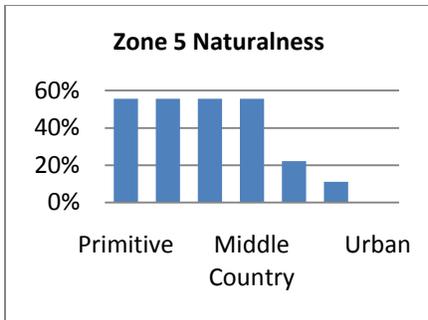
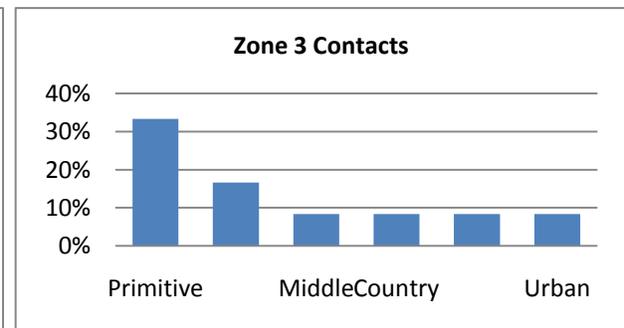
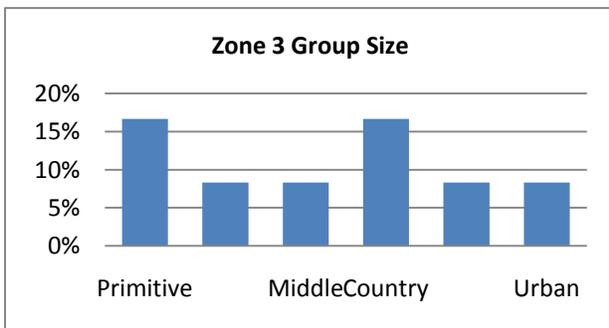
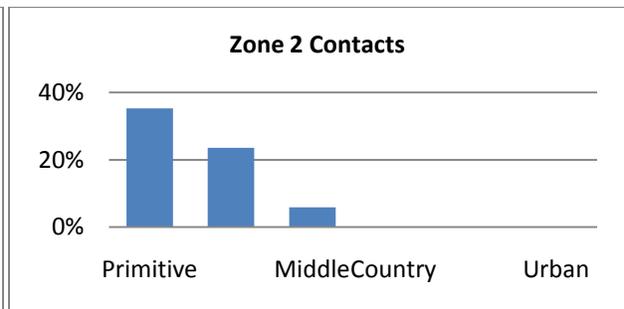
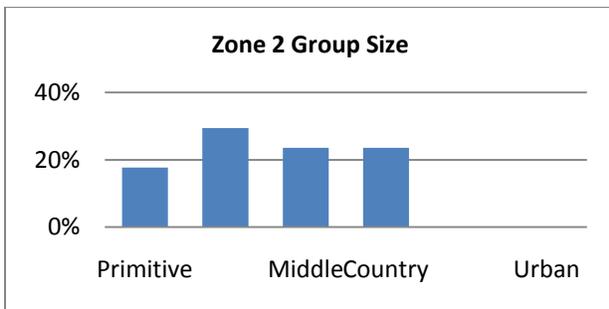
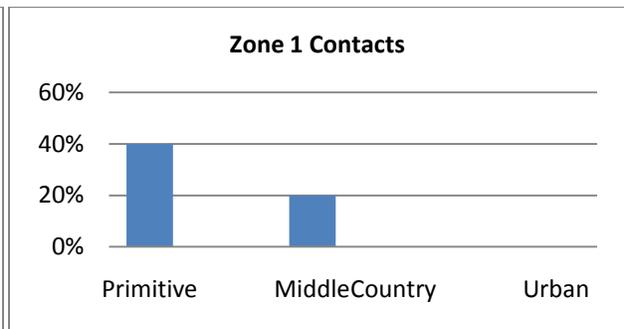
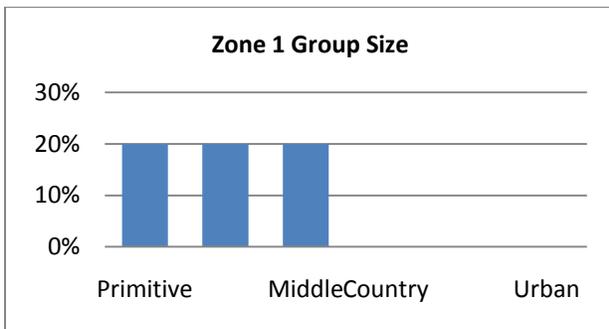


CHART 3.1-5 SOCIAL SETTING ATTRIBUTES TO BE PROTECTED:



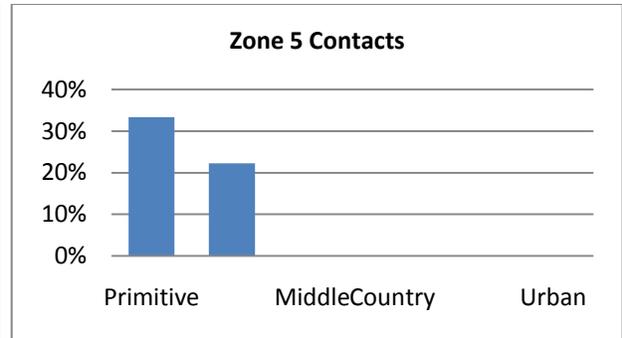
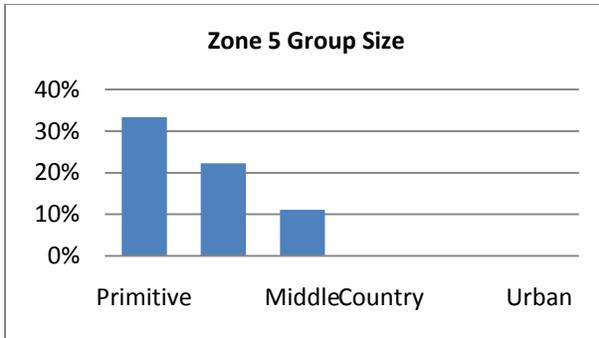
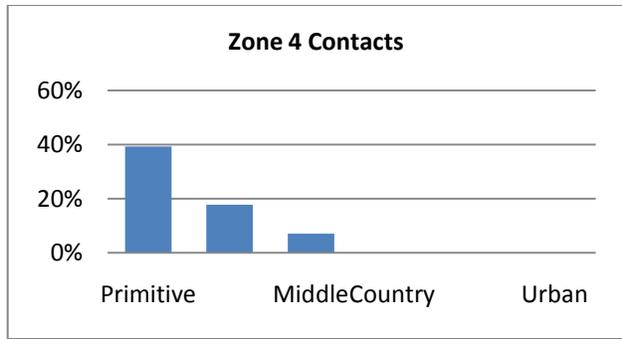
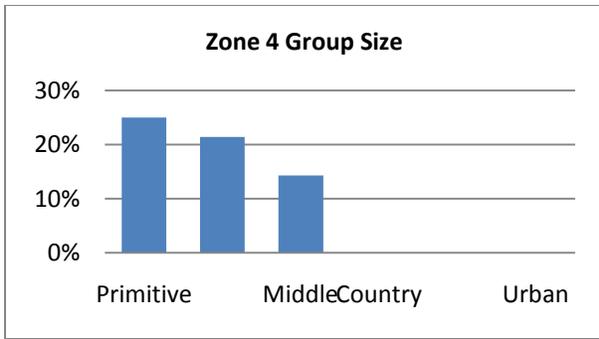
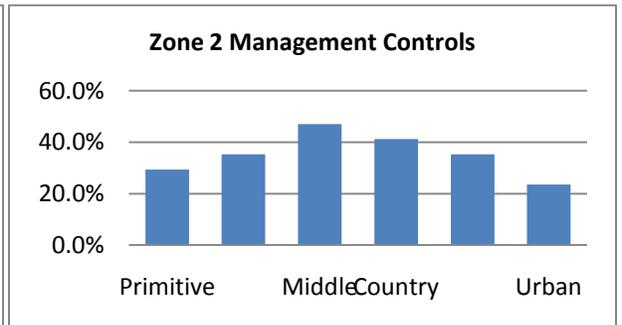
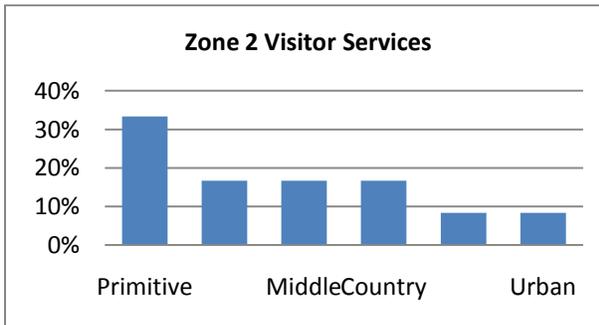
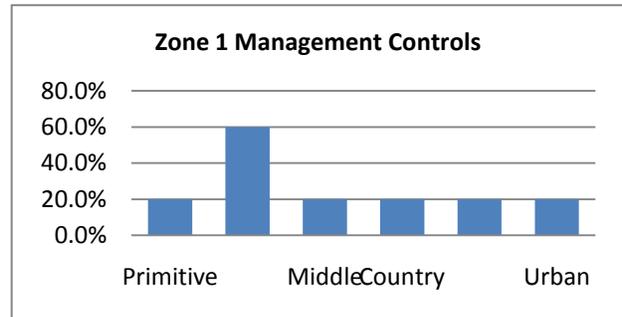
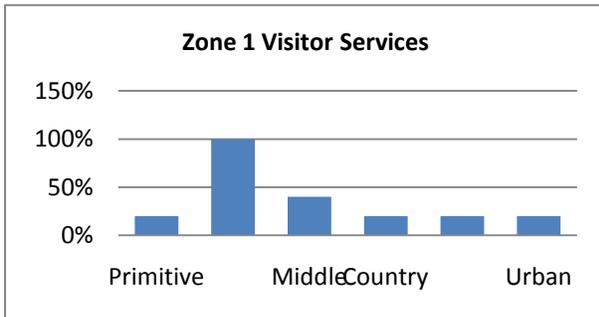


CHART 3.1-6 OPERATIONAL SETTING ATTRIBUTES TO BE PROTECTED:



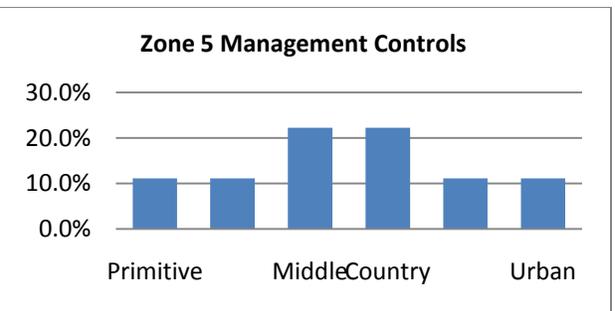
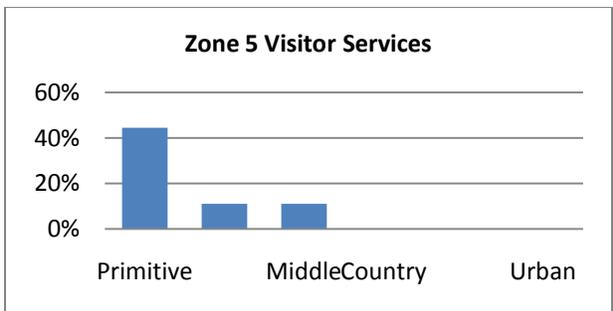
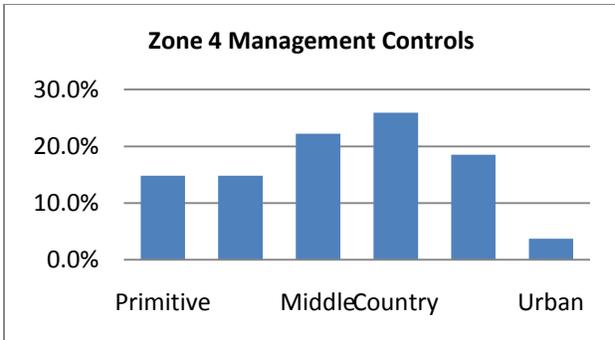
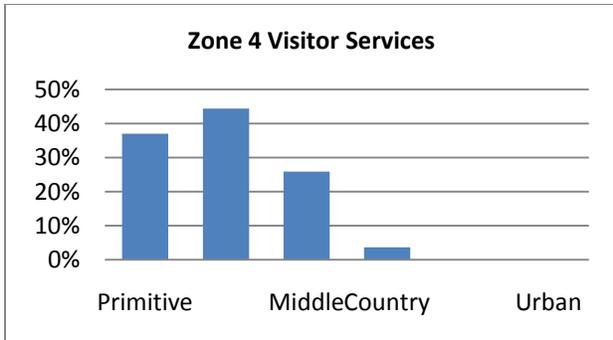
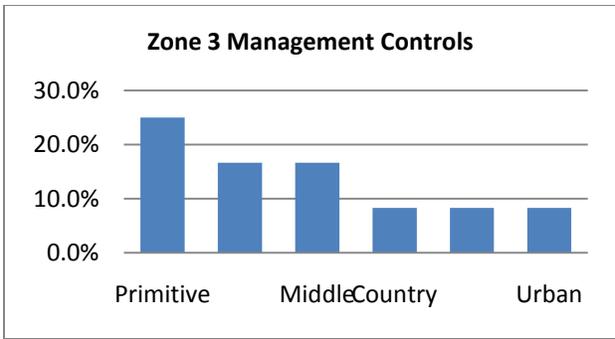
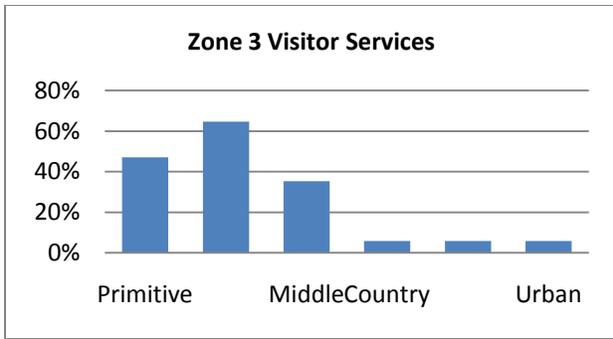
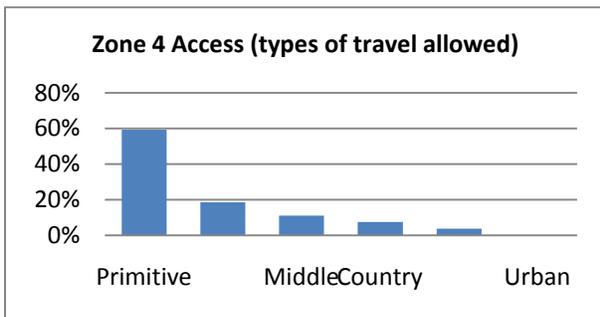
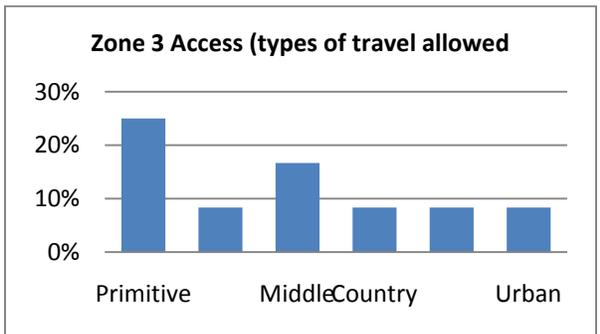
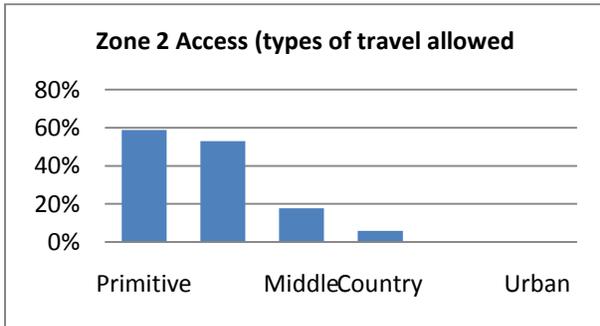
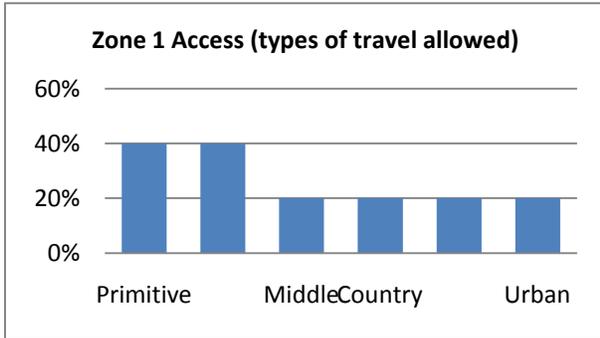
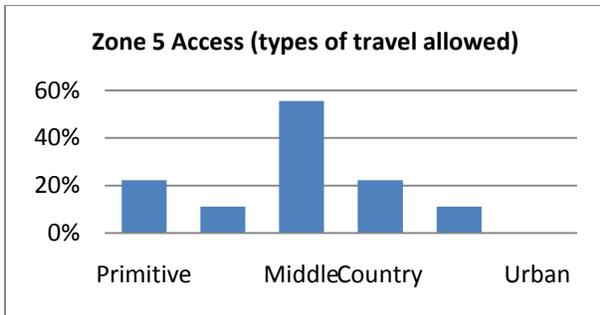


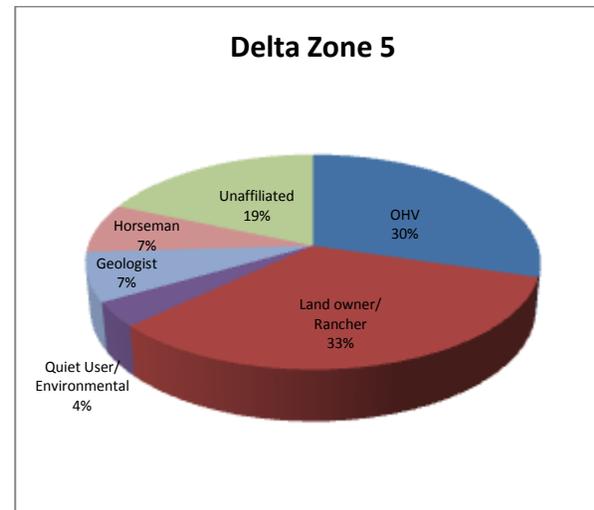
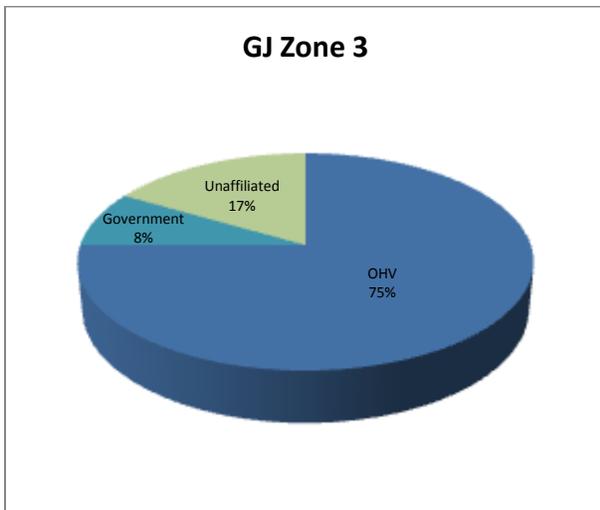
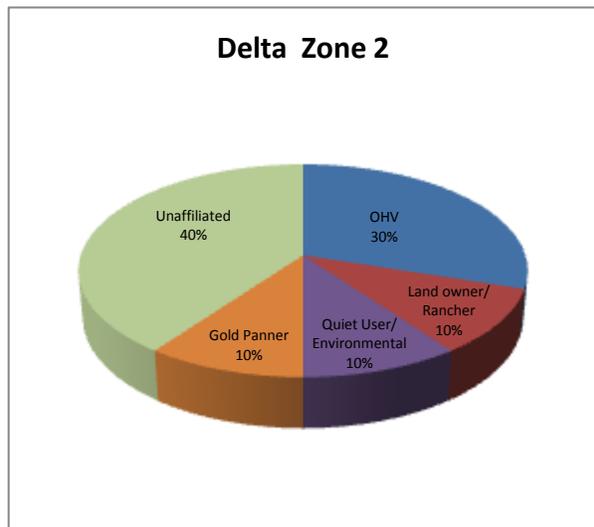
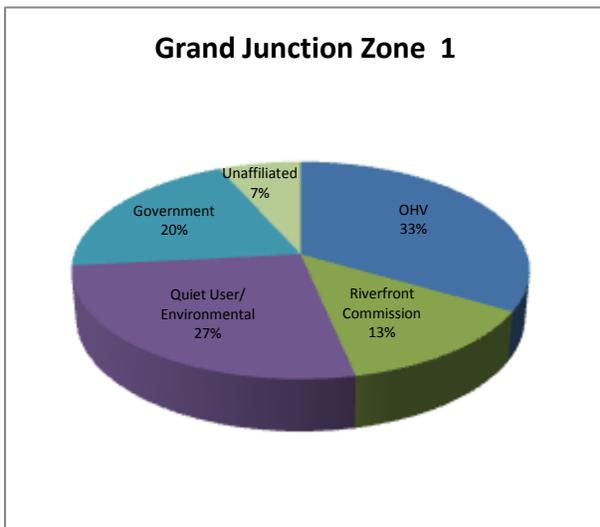
CHART 3.1-7 OPERATIONAL SETTING ATTRIBUTES TO BE PROTECTED: (CONT.)





In addition to the survey work, the NRLPI also conducted focus groups in Grand Junction and Delta. These meetings were represented by both recreation interests and those impacted by recreation. Combined, the participants reflected a good mix of interests associated with recreation in the NCA.

CHART 3.1-8 FOCUS GROUP INTERESTS BY ZONE



*Note: There were two focus groups for Zone 4, one in Grand Junction and one in Delta. Since Zone 4 is the Dominguez Canyon Wilderness, both discussions targeted wilderness management issues and had a different script than Zones 1, 2, 3, and 5.

Focus Group questions were designed to better understand important planning issues, better understand how the results of recreation in the NCA improves the condition of local communities and the environment, and clarify issues from the survey results.

The results from the focus groups suggest recreation and travel management are the most important planning issues. The top six responses are all associated with these issues (trails, new routes, recreation opportunities, road closures, community connection trail, and travel management). Day use fees and target shooting were identified as the least important recreation issues.

Participants could respond to each issue with the following responses:

1– This issue is not important for this zone

2– Neither important no unimportant for this zone

3 – Somewhat important for this zone

4 – Really important for this zone

5 – The most important issue for this zone

CHART 3.1-9 FOCUS GROUP RESPONSES

Issue	Zone	Mode	Median
Trails	1	5	5
New Routes	3	5	5
Rec. Opportunity	3	5	5
Road Closures	3	5	5
Community Connection Trail	1	5	4
Travel Management	5	5	4
Permits	2	5	3
Multit-Use	1,5	4.5	4.75
Private Land/Property	1,2,5	4.33	3.33
water rights-water diversions	2,5	4	4
Hunting	2,3,5	4	3.67
Scenic Views	1	4	3.5
Gates/Fences	3,5	4	3.5
Stock/Wildlife ponds	3,5	4	3.5
Overuse	2	4	3
Issue	Zone	Mode	Median
Law Enforcement/plan enforcement	2,3,5	3.67	3.33
Camping/fire/group use	3,5	3.5	3.5
Grazing	1,5	3.5	3
Litter/Vandalism/Partying	1,3,5	3.25	3.25
Restrictions	5	3	3.5
Trespassing	5	3	3.5
Spanish Trail	1	3	3
Commerical Outfitting	2	3	3
Consumptive Use (firewood and quarry)	3	3	3
Separate Use Groups	3	3	3
Weekend &Weekday use	3	3	3
Pot holes	5	3	3
Streams and Riparians	5	3	3
Arch.Sites and protection	1,2	3	2.75
Recreational prospecting	2	3	2
fishing	5	3	2
Wildlife (corridors, buffers and habitat)	1,2,3	2.67	2.67
Access to wilderness	2	2	3.5
search and rescue	5	2	2.5
Fire Surpession	2	2	2
Vegetation-Plants	1,5	1.5	2.75
target shoot/Undefined Shooting Area	1,5	1.5	2.5
RR	1	1	2.5
Day Use Fees	2	1	2
noxious weeds	2	1	2

As mentioned above, the BLM planning process assumes recreation participation results in improved conditions for local communities (social, economic, and political) and improved condition for the environment. To better understand this connection, participants in the focus group were asked to list how their participation in recreation improved communities and the environment.

Responses associated with improved conditions for communities:

1. Enhances quality of life for residents
2. Assist in search and rescue operations
3. Family bonding time
4. Enhances tourism
5. Historic Preservation – link to heritage
6. Economic benefits – gear, lodging, restaurants, refueling, guiding
7. People come back happier/more productive
8. Creates a sense of ownership/stewardship for public lands
9. Community Development
10. Enhances civil society

Responses associated with improved conditions for the environment:

1. More eyes on ground to help law enforcement
2. Volunteers help build trails (save BLM \$)
3. Pick up trash while recreating
4. Hunting, Fishing, wood cutting - help manage wildlife and vegetation
5. Builds connection to land, they want to protect it
6. Education about public lands

Focus groups were also asked about their activity participation patterns while recreating in the NCA. The combined results from the Zone 1, 2, 3, and 5 focus groups clearly shows visitors participate in more than one activity when there are in the NCA. These results compliment the activity results from the survey by further suggesting visitor recreation demand extend beyond participation in a single activity.

Focus Group participants were asked the following questions:

Which of the following best describes your experience of these activities in this zone?

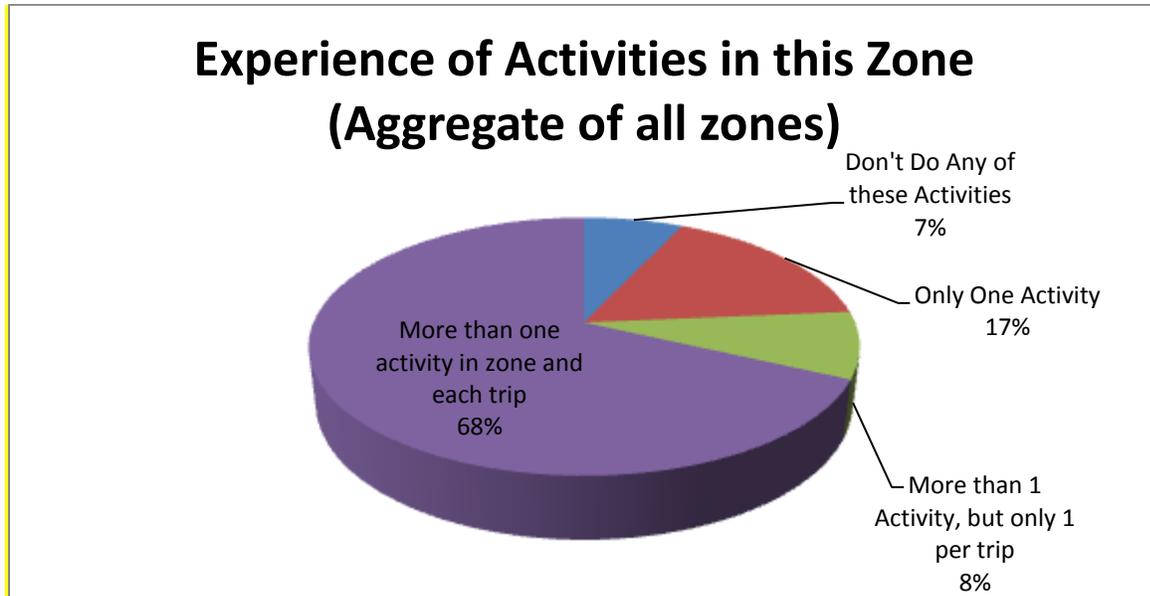
- 1 - I don't do any of these activities in this zone

2 - I have done only one of these activities in this zone

3 - I have engaged in more than one of these activities in this zone, but only one each trip

I have engaged in more than one of these activities in this zone and engaged in this zone, and engage in more than one activity each trip

CHART 3.1-10 AGGREGATE EXPERIENCES



Trends:

Currently, recreation trends in the NCA include increased motorized use as a result of loss of opportunities on other public lands (travel planning on the forest, UFO Dry Creek Travel Management, and GJFO Bangs Canyon and North Fruita Desert SRMA travel decisions); increased hiking and equestrian use as a result of BLM development, i.e. the Bridgeport Bridge. The development of new facilities in Cactus Park is new enough, there is no trend data on whether use has increased. The most significant trend in use patterns is related to the population increases of the past decade in Mesa, Delta and Montrose Counties. The NRLPI survey data shows 92% of overall recreation users in the NCA are from Colorado. The data also shows 61% of overall users are from Mesa, Delta or Montrose counties. (see attached map) As local population changes occur, it is anticipated recreation use in the NCA will change.

Adequacy of Current Management:

Current management objectives for the NCA are found in the GJFO and UFO Uncompahgre Basin RMPs.

The current GJFO recreation objectives are:

1. "To ensure the continued availability of outdoor recreational opportunities which the public seeks and which are not readily available from other public or private entities."

2. “To protect resources, meet legal requirements for visitor health and safety, and mitigate resource user conflicts.”

The current GJFO management actions included:

1. Identify the Cactus Park and Rabbit Valley areas as group use areas.
2. Continue to manage the existing developed recreation sites (Dominguez).
3. Manage the Dolores, Gunnison, and Colorado Rivers corridors to protect recreational opportunities in and along the rivers. Require commercial floatboat operators to obtain river use permits.
4. Adopt the recreation opportunity spectrum management classes shown on Map 14.

The current UFO RMP recreation decisions:

1. Public lands will be managed for extensive and diverse recreational use.
2. River access will be developed at the Escalante Bridge. Maps and informational materials on river use will be provided. The BLM will manage recreation use in a manner that will minimize recreational impacts on interspersed and adjacent private land.
3. Management Units 2, 3, 5, 7, 9, 10, 11, 13, and 16 will be managed for extensive recreational use to meet public demands for dispersed recreation. (part of the NCA is in Management Units 3 and 9)

Forecast

Current management from both the UFO and GJFO plans is not adequately addressing recreation issues in the NCA. Increased demand (especially for motorized OHV opportunities) and lack of specific recreation objectives is resulting in changing recreation settings, increased conflict, and losses of specific recreation opportunities.

Managing without a long-term commitment to protecting specific recreation opportunities has resulted in changes to the physical, social and operational settings. Increased demand for motorized OHV recreation has resulted in more routes, changing the physical setting; increased demand has resulted in the construction of the Bridgeport Bridge, changing the physical, social and operational setting; increased demand has resulted in the construction of visitor facilities at the Potholes and in Cactus Park, changing the physical and operational settings. Incrementally, these changes result in recreation opportunities shifting from historic use patterns to new patterns which have a different tolerance for the more developed settings. Without more specific recreation objectives, this pattern of recreation settings changing from less developed to more developed will continue.

Conflict between different recreation users groups, within the same user group, and with other resources and adjacent private land has increased as a result of not having specific recreation objectives and guidance. Quiet users in Cactus Park are in conflict with motorized users; hike-in users are in

conflict with float-in users in the lower part of Dominguez Canyon; trespass issues are a problem along the Gunnison River and Escalante Creek; and users seeking opportunities are damaging natural and cultural resources throughout the NCA.

The overall result of this lack of adequate management is loss of recreation opportunities. As mentioned above, visitors and recreation uses that tolerate more people and more development are displacing visitors seeking a less developed, less crowded environment.

Management Opportunities:

Recreation in the NCA can be managed as a Special Recreation Management Area (SRMA), an Extensive Recreation Management Area (ERMA), or as lands with no recreation management area designation. The SRMA management tool provides opportunities to make a long-term commitment that protects or enhances a set of activities, outcomes and recreation settings. The ERMA management tool provides opportunities to support and sustain recreation activities and address other recreation issues. Management of recreation outside either an SRMA or ERMA provides opportunities to manage areas without a recreation focus.

Since there are currently no recreation management areas in the NCA, these different tools provide a wide variety of management options. As indicated above in the recreation demand section, visitors desire a variety of outcomes, recreation settings, and activities throughout the NCA. Designation of an SRMA would provide the option of protecting these desired opportunities. Different objectives could be developed for different recreation management zones (RMZs) to selectively manage for one, or where compatible, more than one niche bundle.

ERMA management provides management opportunities to protect different recreation activities. Though no commitment would be made to protecting outcomes, this management strategy would provide a level security to user groups concerned with loss of opportunities resulting from encroachment of non-compatible uses or management decisions to close areas to certain types of activities.

Due to recreation being listed as one of the *purposes* of the NCA in the enabling legislation, managing the NCA as lands with no recreation management designation is generally not an option. The exception would be in the Dominguez Canyon Wilderness. Opportunities for solitude or primitive and unconfined recreation are wilderness values. Recreation opportunities in the wilderness could be defined and protected as part of the wilderness management plan.

There are three public land administrative units that border the NCA resulting in opportunities to manage recreation in a way that is consistent with and complements recreation management on the adjacent lands. The Uncompahgre National Forest manages motorized recreation through its travel management plan. As noted above, there is an extensive OHV trail system on the forest. There is an opportunity to manage OHV recreation, either SRMA or ERMA, in a way to connect with the forest. Both the UFO and GJFO are currently revising their Resource Management Plans. There is an opportunity to coordinate with both offices regarding consistency in recreation management.

Addressing recreation capacity issues is another management opportunity. Defining use levels through the planning process could reduce the conflict and congestion at the mouth of Dominguez Canyon. Defining a Special Recreation Permit (SRP) classification process and setting allowable use restrictions for SRPs could help set expectations for outfitters and other potential permit applicants.

Finally, there is an opportunity to engage community partnerships to secure long-term commitments for managing recreation in the NCA. Whether recreation is managed as an SRMA or an ERMA, partnerships will be necessary to manage, monitor, and market the recreation opportunities. Potential partnerships include other service providers (both public and private), tourism organizations, and volunteers. Other partnership opportunities were identified as part of the NRLPI focus groups. See Table 3.1-4 Potential Partnerships. Suggested partnerships and how they can help manage recreation include:

TABLE 3.1-4 POTENTIAL PARTNERSHIPS

Partnerships Suggested in DENCA Focus Groups 2010		
Zone	Partner	Task/Notes
1	Riverfront Commission	Trail from GJ to Delta through Zone
1	County Governments	Law Enforcement, recreation prioritization
1	School Districts	Educational outings with students
1	Partners Program	Opportunities for youth work on BLM lands
1	Boy Scouts and Girl Scouts	Opportunities for youth work on BLM lands
All	Natural Resource Venturing	Connecting youth to landscape through adventure recreation
1	Local Chapter of Old Spanish Trail Association	Historic Trail Preservation
1	Mesa Land Trust	
1	WSATV	Trail Building, Cleanup days, Search and Rescue
1	Cabela's, Sportsman's Warehouse and others	Public information campaigns and in-kind donations of materials
2	Law Enforcement -County and State	Vandalism, trespassing and other enforcement issues
2	Local/adjacent landowners	planning process, vandalism, trespass and other property issues, access
2	Railroad	access, safety
Partnerships Suggested in DENCA Focus Groups 2010		
2	Volunteer groups	Take head counts of recreation groups in zone

2	Stakeholders advisory group	on-going consultation with BLM on issues as they arise
3	WSATV	Trail Building, Cleanup days, Search and Rescue
3	Ranchers	Gates, trespass issues
3	DOW	wildlife habitat management
5	County Stakeholder's Association	
5	USFS	Joint use land management issues because of proximity and shared watershed
5	Law Enforcement -County and State	Vandalism, trespassing, speeding on Escalante Canyon Road and other enforcement issues
5	County Governments	Law Enforcement, recreation prioritization
5	Property owners	planning process, vandalism, trespass and other property issues, access

3.2 Scientific*

Science

The scientific resources of the D-E NCA were singled out in the 2009 Omnibus Act as purposes for the area's designation as an NCA. Science can encompass research by academic or professional institutions, and applied research by BLM staff, as well as state and federal agencies.

Science in National Landscape Conservation System (NLCS) units is defined broadly as 'including basic and applied research in natural and social science, as well as inventory and monitoring initiatives' (BLM 2007). In addition, within NLCS units there is an expectation for 'identifying science needed to address management issues, communicating those needs to science providers, and incorporating the results into the decision making process' (BLM 2007).

Ecosystem management is also a stated goal of NLCS units. Ecosystem management was defined for the BLM as; "The integration of ecological, economic, and social principles to manage biological and physical systems in a manner safeguarding the long-term ecological sustainability, natural diversity, and productivity of the landscape" (Morrissey et al. 1994). Further, the goal of ecosystem management for the BLM is "to develop and implement management that conserves, restores, and maintains the ecological integrity, productivity, and biological diversity of public lands" (Morrissey et al. 1994).

Current Use

Science-related activities within the D-E NCA are currently managed by applicable programs within both the Grand Junction and Uncompahgre Field Offices. This includes internal monitoring programs being

conducted by the BLM, as well as external research being conducted by individuals outside of the BLM. Because these activities are usually managed in a resource-specific manner, much of the information that would be found in this section can instead be found under specific resources.

Internal

Each resource program housed under the BLM monitors the condition of their resource. For example, water quality and water flow are monitored in the NCA by hydrologists and cultural sites are monitored by archeologists. Significant differences in monitoring methodology for most resource programs exist between the GJFO and UFO. This has led to challenges in reconciling two field office data sets into a single NCA-wide data set.

Rangeland monitoring, which assesses the condition of a wide variety of resources from wildlife to water quality, is done very differently in the GJFO and UFO. While both offices use land health assessments to monitor rangeland health, the methodology used to assess health as well as the role that land health assessments play in management decisions are different. These differences are summarized in Appendix C of this document (Summary Report for Land Health Assessments in the D-E NCA).

While much of the monitoring done by the BLM is done internally, the BLM partners with other state and federal agencies in order to monitor many resources. These partners include the Colorado Division of Wildlife, US Geological Survey, Colorado Natural Heritage Program and the US Forest Service.

External

Research by external researchers is permitted on a case-by-case basis. There are currently three active paleontology research sites in the D-E NCA. In addition, academic research in fire ecology, soil development and forestry (among other topics) have been performed in the area now known as the D-E NCA. Because a comprehensive science plan does not exist for the D-E NCA, current use of the D-E NCA for science-related purposes is fragmentary and program-specific.

Current Guidance

Resource Management Plans

Neither the GJFO nor Uncompahgre Basin RMPs provide general science-related guidance.

The GJFO RMP (1987) has some references to science and/or education for paleontology and archaeology. Specifically, it says the Fruita and Rabbit Valley paleontological sites would be managed for scientific and educational purposes. Neither of these sites is located within the D-E NCA. Archeological research will be conducted in a scientifically acceptable manner. The designation of the Gunnison Gravels ACEC as both an ACEC and Research Natural Area (RNA) suggests an emphasis on research in this small area (approximately 9 acres) of the D-E NCA.

The Uncompahgre Basin RMP (1989) says that less than 1% of the planning area has scientific values as an important value. This refers to areas that were designated in the plan as Outstanding Natural Areas and ACECs, which includes the Escalante Canyon ACEC within the D-E NCA.

Monitoring

The BLM requires that BLM staff monitor the condition of resources over the life of resource management plans (RMPs). Monitoring is used to do the following two tasks:

- Track the implementation of land use planning decisions (implementation monitoring)

- Collect the data/information needed to evaluate the effectiveness of land use planning decisions (effectiveness monitoring)

BLM Land Use Planning Handbook (H-1601-1)

Evaluation

The BLM also requires periodic evaluations of land use plan decisions and NEPA analyses. The Land Use Planning Handbook suggests that plans should be evaluated at a minimum every five years, prior to plan revisions and for major plan amendments. Plans are evaluated to determine if:

- Decisions remain relevant to current issues
- Decisions are effective in achieving (or making progress towards) desired outcomes
- Any decisions need to be revised
- Any decisions need to be dropped from further consideration
- Any areas require new decisions

BLM Land Use Planning Handbook (H-1601-1)

Adaptive Management

Adaptive management was defined by the Office of Environmental Policy and Compliance (OEPC) as:

“...a system of management practices based on clearly identified outcomes, monitoring to determine if management actions are meeting outcomes, and, if not, facilitating management changes that will best ensure that outcomes are met or to re-evaluate the outcomes” (Office of Environmental Policy and Compliance, ESM03-6).

The BLM has begun to integrate adaptive management into resource management plans and other NEPA documents. However, bureau-wide guidance has not been issued.

Management Opportunities

NLCS Science Strategy

A science plan would be an effective way of integrating science into everyday management of the D-E NCA. For example, the recently completed science plan for the McInnis Canyons National Conservation Area (MCNCA) contained the following objectives:

- Identify the scientific mission of MCNCA,

- Identify the priority needs and management issues within MCNCA that can be addressed by scientific inquiry and identify past and current scientific inquiries that have occurred within MCNCA
- Define a strategy for accomplishing the scientific goals of MCNCA
- Promote the use of scientific knowledge and findings within MCNCA including

A similar plan could be accomplished within the D-E NCA in order to accomplish similar goals.

3.3 Educational resource uses*

Current Use

The D-E NCA provides a significant resource for learning and education, particularly as they relate to biological, cultural, geological and paleontological resources. Throughout much of the D-E NCA, learning must be done as a self-guided endeavor. Very few guided learning sites exist in the D-E NCA. Interpretive signs can be found at the Dominguez Campground, Escalante Canyon, Bridgeport and the Gunnison Gravels ACEC in Cactus Park. Despite the paucity of established interpretive sites, many long-time residents describe their experiences in the D-E NCA in terms that suggest learning and personal development.

D-E NCA is occasionally used by student groups for field trips and experiential education. These trips are permitted on a case-by-case basis. Some examples of organizations that have taken education-related trips to the D-E NCA include the Partners of Delta County, EXPLORE! and Gunnison River Expeditions. All three of these organizations have consistently taken trips down the Gunnison River, and provided opportunities for experiential education.

Current Guidance

Resource Management Plans

Neither the GJFO nor UB RMPs provided general guidance regarding education. Instead, education-related guidance can be found within each resource area. However, both RMPs did designate specific areas for educational purposes. These generally referred to ACECs, Outstanding Natural Areas (ONAs) and Research Natural Areas (RNAs). One such area exists on the GJFO side of the D-E NCA, the Gunnison Gravels ACEC. On the UFO side of the D-E NCA, the guidance provided for the Escalante Canyon ACEC has no specific education-related language.

America's Great Outdoors Initiative

The America's Great Outdoors (AGO) Initiative was launched on April 26, 2010 by executive order. The general goal of this initiative is to reconnect Americans with their 'natural and cultural heritage'. The following is excerpted from a report released in February 2011:

"The result is a call for a grassroots approach to protecting our lands and waters and connecting all Americans to their natural and cultural heritage. AGO seeks to empower all Americans—citizens, young people,

and representatives of community groups; the private sector; nonprofit organizations; and local, state, and tribal governments—to share in the responsibility to conserve, restore, and provide better access to our lands and waters in order to leave a healthy, vibrant outdoor legacy for generations yet to come.”

America’s Great Outdoors: a promise to future generations February 2011

This initiative includes a specific objective that the federal government should “engage young people in conservation and the great outdoors”

Management Opportunities

Similarly to the science plan described in the science section of this document, BLM staff could develop an education plan that would establish a comprehensive strategy for education-related activities in the D-E NCA. This plan would incorporate objectives related to research, interpretation, as well as school group visitation, into a single guiding document for the NCA. By doing so, each resource program could draw on a single document that would guide the education components of their respective programs in a comprehensive, inter-disciplinary and consistent way.

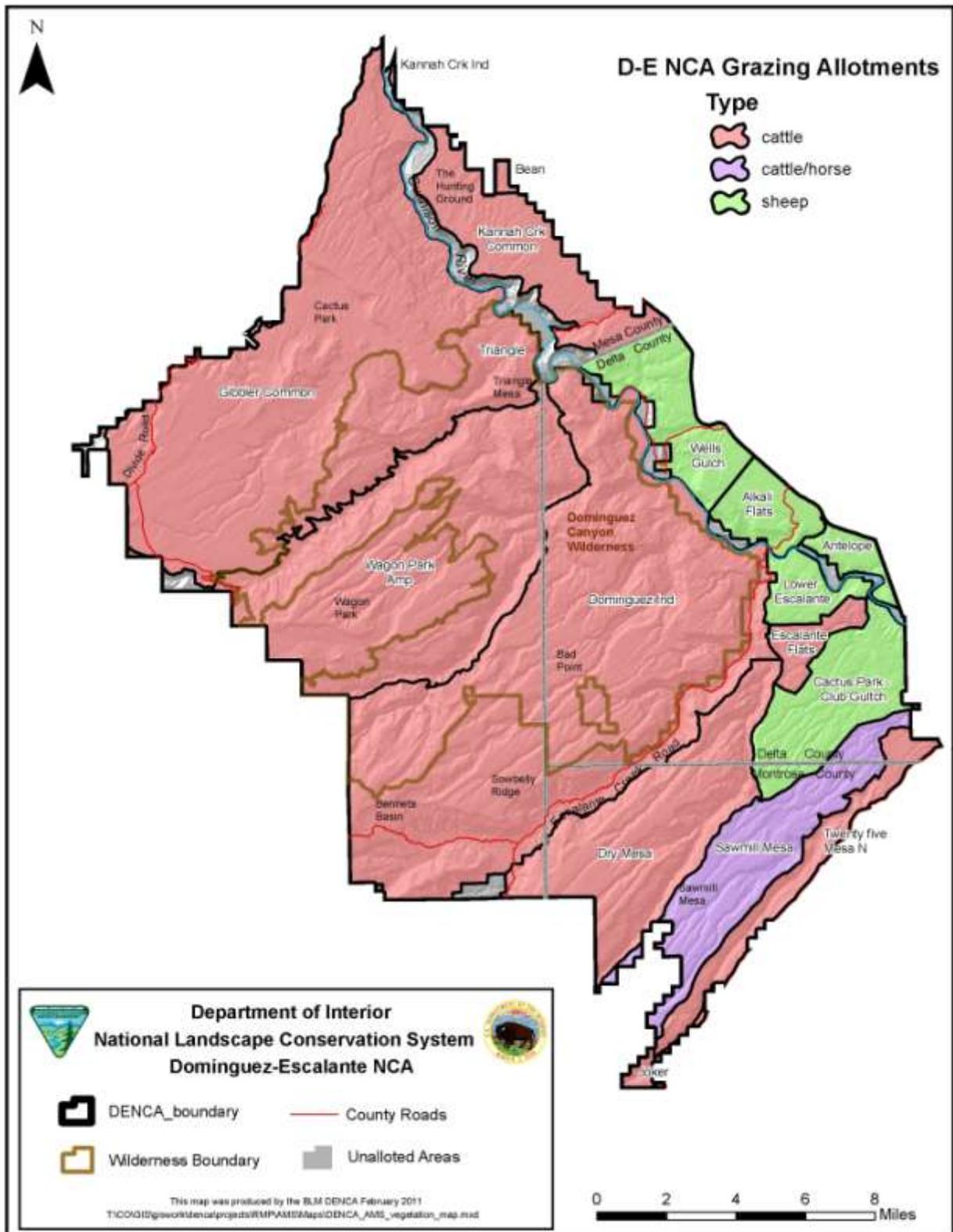
Instead of a stove-pipe approach for each discipline, D-E NCA could be the umbrella over an inter-disciplinary approach to education for audiences in K-12, college and community groups. For example, a class interested in rock art, might be interested to learn about opportunities to learn about geology, wildlife biology or water quality in D-E NCA.

3.4 Livestock Grazing

Current Conditions

Levels of Use

204,493 acres or 97.5 percent of the BLM lands within the D-E NCA are within grazing allotment boundaries managed in accordance with existing Resource Management Plans (RMP). Approximately 5,129 acres or 2.44 percent is unallotted. Unallotted acreage includes small isolated parcels, not included within existing allotment boundaries or allotments that have been relinquished back to BLM.



The following tables give allotment and AUM information at a glance.

TABLE 3.4-1 D-E NCA GRAZING ALLOTMENTS

While some allotments are entirely within the NCA, others are both inside and outside the NCA.

Allotments	Entirely within NCA	Partially within NCA	Total	Acres of allotments within NCA
GJFO	2	3	5	93,727
UFO	4	8	12	110,766
Total	6	11	17	204,493

TABLE 3.4-2 ALLOTMENTS BY USE

Of the 17 allotments, 16 are permitted for livestock grazing and 1 is unallotted (Bean)

Allotment by use	GJFO	UFO	AUMs
Cattle	6	6	11,759
Sheep	0	5	2,644
Horse	0	1*	
D-E NCA permittees	6	11	14,403

*One horse allotment overlaps a cattle allotment

TABLE 3.4-3 RANGE CONDITIONS

Range conditions and other considerations have led to some AUM suspensions.

Total AUM	GJFO	UFO	Total
Total preference	7,271	9,244	16,515
Total suspended	1,927	185	2,112
Total active presence	5,344	9,059	14,403

Cattle grazing occurs primarily during the spring and fall periods

Sheep grazing occurs during the winter and early spring

Current Conditions

Level of Use

Allotments are an outgrowth of the grazing districts and permitting system established to manage livestock grazing in these districts by the 1934 Taylor Grazing Act.

Allotments/AUMs

There are 17 allotments in the D-E NCA. In addition to BLM land, these allotments may contain other lands, including National Forest System, Bureau of Reclamation, municipal, state, and private land. Of these allotments, 16 are permitted for livestock grazing and 1 is vacant. Total active preference (permitted use) is 14,403 AUMs, with an additional 2,112 AUMs in suspension.

Total permitted numbers adjust occasionally due to conversions of the class of livestock, changes in allotment boundaries or livestock management, and changes to meet carrying capacities as determined by vegetative inventories. Within the past five years, adjustments have been made to authorized grazing use based on Land Health Assessments, data from the vegetative inventory, Ecological Site Inventory, and other rangeland monitoring. Twelve allotments are used for grazing cattle, primarily cow/calf operations. The authorization of sheep occurs on five allotments. One allotment also includes horse use. Sheep grazing has diminished throughout the years, based on economics and changes in the industry.

Allotment and grazing use data for all allotments currently permitted for grazing use in the D-E NCA is identified in Table ?.

Current Range Allotments

Initiated in 1999, the grazing permit renewal process changed. The new policy requires all permit renewals to include a thorough NEPA analysis to address impacts from proposed livestock management. The process includes an interdisciplinary team approach and public involvement, considering:

- Analysis of grazing impacts to other resources and uses,
- Terms and conditions within the proposed livestock management plan and associated permit,
- Conformance to the Colorado Standards for Rangeland Health, and
- Analysis of monitoring data.

All permits within the D-E NCA have been renewed through this process.

The season of use within the D-E NCA is primarily spring and fall use for the cattle allotments and winter, early spring for sheep allotments. Some allotments are used when transitioning to or from a USFS allotment. Some higher-elevation allotments may also include grazing during the summer period. Because of variations in weather and range readiness, the turn-in dates for the USFS allotments are sometimes delayed. This delay sometimes causes an extended period of use on some of the BLM-administered allotments.

The USFS and BLM cooperate in determining range readiness for the allotments and coordinate movement of livestock from BLM allotments to USFS allotments. An increase in activities such as recreation and fuel reduction have influenced livestock management in varying degrees. Some of these

activities result in changes of use or mitigation to minimize impacts to all activities involved. The presence of resources such as wildlife, threatened and endangered plants and animals, riparian resources, cultural resources, ACEC's and Wilderness also impact livestock management. Some of these areas have been fenced off from livestock, while other areas are monitored for livestock impacts.

Management Categories and Allotment Management Plans

Three selective management categories for allotments have been developed:

Custodial, Maintain, and Improve. Each allotment within the D-E NCA has been categorized.

TABLE 3.4-4 MANAGEMENT CATEGORIES BY ALLOTMENT

Custodial	Maintain	Improve
5 allotments	1 one allotment	10 allotments

Custodial allotments in this area are small parcels of public land intermingled with larger tracts of private and/or state land. Due to the small amount of public land involved, these allotments require significant investments of time or money that are not justified.

With **Maintain** category allotments, the BLM is either satisfied with the current conditions or the allotment does not contain many sensitive resources. Although some investment in time or money would be justified in these allotments, they are not as high a priority as Improve category allotments.

Improve category allotments are either in unsatisfactory condition or contain significant sensitive resources that would justify investments of time and money. These allotments are our highest priority for monitoring and range improvement development. In addition, changes have occurred as needed on a case-by-case basis as circumstances deem necessary. (See Table 3.4-5 Management Issues)

TABLE 3.4-5 MANAGEMENT ISSUES

Allotment Name/Number	Category	Potential/ Confirmed T&E species	Riparian	WSA /WA	Potential/ Confirmed BLM Sensitive Species	Land Health Concerns
Uncompahgre Field Office						
Dominguez #14001	I	X	X	X	X	X
Escalante Flats #14003	M	X			X	X
Dry Mesa #14006	M	X	X		X	X
Sawmill Mesa #14007	I	X	X		X	X

25 Mesa North #14008	M	X			X	X
White Ranch #14015	C					
Joker #14014	C					
Cactus Park-Club Gulch #03278	M	X			X	X
Lower Escalante #14002	M	X	X		X	X
Alkali Flats #14017	M	X	X		X	X
Antelope #14020	M	X	X		X	X
Wells Gulch #14016	M	X			X	X
Grand Junction Field Office						
Gibbler Common #26301	I	X	X	X	X	X
Wagon Park #26302	I	X	X	X	X	X
Kannah Creek Individual #06207	C	X			X	
Kannah Creek Common	I	X	X	X	X	X
Bean	C	X				

Category C (Custodial)

Category M (Maintain)

Category I (Improve)

As of 2010, 13 allotments are part of an implemented allotment management plan (AMP) or grazing use agreement that identifies a change in livestock management and/or more intensive management. Five of these allotments are in the Improve category, eight are in the Maintain category, and four are in the Custodial category. Changes in management may be due to conflicts with other uses, conflicts with

other resources; adjustment in authorized active AUMs based on Ecological Site Inventory; or a Land Health Assessment where livestock grazing has been determined to be a causal factor. Improve category allotments have priority in completing AMPs but due to new resource issues and increased focus in some areas, some AMPs have been established for lower priority allotments.

Monitoring and Inventories

Monitoring continues to be an important component of the livestock management program. All allotments within the D-NCA are monitored: methods include photo points, nested frequency transects, Daubenmire Cover transects, utilization, apparent trend, actual use, big game transects, and allotment supervision. Each allotment has one or more of these studies depending on the issues and concerns and prioritization category. Monitoring data are analyzed during the grazing permit renewal process or as needed. An Ecological Site Inventory has been completed within the GJFO portion of the D-E NCA. Data obtained from the inventory results in a computation of species composition, production, and ecological seral stage. Results are used in permit renewals, active AUM adjustments, fire and fuels management, and assessment of wildlife habitat.

The Colorado Standards for Public Land Health and Guidelines for Livestock Grazing Management

These standards and guidelines, effective in 1997 through land use plan amendments, established conditions needed to sustain public land health for soils, riparian systems, upland vegetation, wildlife habitat, threatened and endangered species, and water quality (BLM 1997a).

Guidelines on livestock grazing management tools, methods, strategies, and techniques are designed to maintain or achieve healthy public lands as defined by the standards. The standards and guidelines have been implemented through Land Health Assessments, determination documents, EAs, permit renewals, and other permit changes. These standards not only pertain to impacts associated with livestock grazing, but also to other rangeland impacts from such activities as recreation, development activities, wildlife grazing, and wild horse management. Sustainable livestock grazing and desired rangeland conditions requires the collective management of forage, water, soil, and livestock by the BLM and the livestock owners and operators. An interdisciplinary approach ensures effective management of the multiple resource values and uses in the D-E NCA RMP.

Management practices for livestock grazing have been focused on achieving land health standards and meeting objectives for other resources (for example, vegetation and soils) established for allotments. This has been accomplished by better conformance with the guidelines for livestock management, such as changing the duration of grazing use, season of use, reducing animal units, and improving grazing distribution. Reducing the duration of grazing use and improving livestock distribution are generally the key to meeting rangeland objectives, particularly those associated with riparian areas.

Grazing management has been improved by a variety of actions, such as:

- adjustments in grazing permits
- changes in active AUMs authorized
- changes in management
- addition of terms and conditions related to permits and allotments,
- construction of water developments and pasture fencing, and
- maintenance of range improvements and grazing permits.

Vegetation treatments have also been utilized to increase the forage base for livestock and wildlife and to achieve other goals of fuel reduction and improved wildlife habitat.

Characterization

Trends in livestock grazing reflect changes in livestock types, changes in permittees and their perspectives, changes in permitted use or season of use, and changes in other resources uses and priorities. Sheep and cattle grazing occurs within the planning area. Over the years, sheep grazing has diminished in the GJFO, whereas the UFO maintains sheep grazing, contributing to the sheep industry in Delta County.

Changes in the types of permittees that run livestock have resulted in diversification of perspectives. Some permittees value the wildlife resources and habitat on their grazing allotments in conjunction with the livestock grazing. Results from the Land Health Assessments and Ecological Site Inventories have led to positive changes in livestock management. Changes in permitted use (active use), livestock numbers, or season of use are in response to changes in rangeland condition, socioeconomics, and other factors.

Variations in the condition of the land are in response to:

- climatic factors,
- wildlife,
- past and present livestock use,
- recreational use, and
- population increases.

The increases in all activities are competing for resources that limit livestock grazing. If rangeland conditions deteriorate, BLM has the ability to reduce the number of permitted AUMs, manage plant communities that provide forage and browse through vegetation treatments, change the season of use, require deferment and pasture rotations, and install range improvements such as fences, water pipelines, spring developments, and reservoirs.

These range improvements often enable more intensive grazing systems and encourage better livestock distribution and grazing utilization, but they also require more management on the part of the grazing permittee. Range improvement and permittee involvement may become more crucial in sustaining future resource demands. BLM's traditional goal in managing livestock grazing is to provide sustainable habitat for livestock and other animals. That's likely to remain the primary focus of BLM's management of livestock. Grazing also reduces grass biomass and fuel loads, thus indirectly reducing fire frequency and enhancing the expansion of forests or woodlands (Bachelet, 2000).

Urbanization of rural areas within the areas surrounding the D-E NCA has also caused conflicts with livestock grazing. New land owners are often unfamiliar with state livestock laws and associated fencing requirements. Conflicts develop when livestock, authorized on public land, drift onto private land. This is largely the result of public/private land boundaries that are not fenced or that are poorly fenced, or where fences have not been maintained. It is BLM policy not to fence, or be responsible for maintenance, on boundaries bordering public land. In most instances the BLM has determined that it is

not in the public interest to construct these fences, largely because it would not be practical or economical.

Increasing elk populations have also been an issue with many grazing permittees and are often in direct competition with livestock for forage resources. Although most of the competition occurs on private land, particularly during the winter, further increases in elk populations will likely increase forage competition on public lands. The level of concern varies among grazing permittees. Those who own land where concentrated elk use occurs typically express the most concern over distributional problems. On the other hand, many grazing permittees are engaged in guiding and outfitting activities as another source of income and do not express the same concern as their neighbors.

Vegetation Manipulation

Vegetation has been manipulated by mechanical treatments and controlled burning. Many treatments have occurred through the fuel reduction program as part of the National Fire Plan and wildlife funding. Various wildlife organizations have contributed monetarily to these projects. **Acres ????** have been treated in the past ten years. Vegetation manipulation projects have been used to improve allotment conditions and to reset seral status (move vegetation from late seral shrubs to early seral grasses and forbs) but are rarely used to increase active preference. Several treatments have occurred in areas that were treated in the 1960s and 1970s through chaining and were in need of retreatment, due to the return of the woody species. Two years of rest from livestock grazing is required, following a vegetative treatment, including fuel reduction, habitat improvement, or fire rehabilitation.

Partners

Both field offices have established partnerships and collaborations with the District Grazing Board of Advisors, CDOW's Habitat Partnership Program, Uncompahgre Project and grazing permittees on range improvement projects and funding.

Management Opportunities

Possible changes include the following:

- Update allotment management categories (improve, maintain, and custodial) as needed based on new issues or conflicts.
- As necessary, develop or revise AMPs, or activity plans designed to serve as the functional equivalent of AMPs, to meet the goals and objectives identified in the designation of the NCA.
- Adjust livestock use in areas not meeting land health standards where livestock grazing is a causal factor.

- Allow livestock facilities for better livestock management which could reduce wildlife/livestock conflicts.
- Utilize vegetative treatments and/or fire management to maintain a forage base suitable for livestock, wildlife and land health needs.
- Allow continued maintenance of existing range improvements that are functioning and contribute to the current management of livestock.
- As additional forage becomes available, allocation will be based on priorities for the area or objectives of land treatments.
- Update allotment boundaries and associated grazing information for each allotment including season of use, number and type of livestock, percent public land, and active AUMs, as well as status of management plan implementation.
- Review the status of allotments that are currently not allotted. There are allotments not in use that should be visited to determine whether they should remain available for grazing, combined into adjacent allotments, or considered unsuitable for livestock grazing.
- Manage big game and livestock to reduce conflicts with forage resources.
- Determine areas where certain grazing periods are not appropriate based on environmental conditions or conflicts with other resources or uses.
- Establish parameters for domestic sheep grazing in desert bighorn sheep habitat.
- Establish agreements identifying livestock management activities that will be allowed within the Wilderness and under what conditions.
- Establish minimum rest requirements for forage species.
- Determine minimum rest requirements for land treatments and fire rehabilitation projects.

Range Improvements

The RMP revision should assign maintenance of range improvements through the use of cooperative agreements or range improvement permits. If the D-E NCA encounters situations where maintenance has not been assigned, the D-E NCA could make this a priority and complete the needed documentation and have permittees sign these agreements. If permittees fail to sign agreements, then proposed decisions should be issued to resolve the maintenance situations.

Implement vegetation treatments in areas to reduce conflict with uses and resources or in areas not meeting land health standards where some type of manipulation is required to trigger a trend moving toward meeting land health standards.

3.5 Transportation and Travel Management

Indicators:

Travel and Transportation Management (TTM) is an interdisciplinary approach to travel and transportation planning and management that addresses resource uses and associated access to public lands and waters, including motorized, non-motorized, mechanical, and animal-powered modes of travel. The objectives of TTM are to:

1. Establish a long-term, sustainable, multi-modal transportation system of roads, primitive roads, and trails that addresses public and administrative access needs to and across BLM-administered public lands and related waters.
2. Support the agency’s mission and land use planning goals and objectives to provide for resource management, public and administrative access, and transportation needs.
3. Manage travel and transportation on the public lands and related waters in accordance with law, Executive Order, proclamation, regulation, and policy.

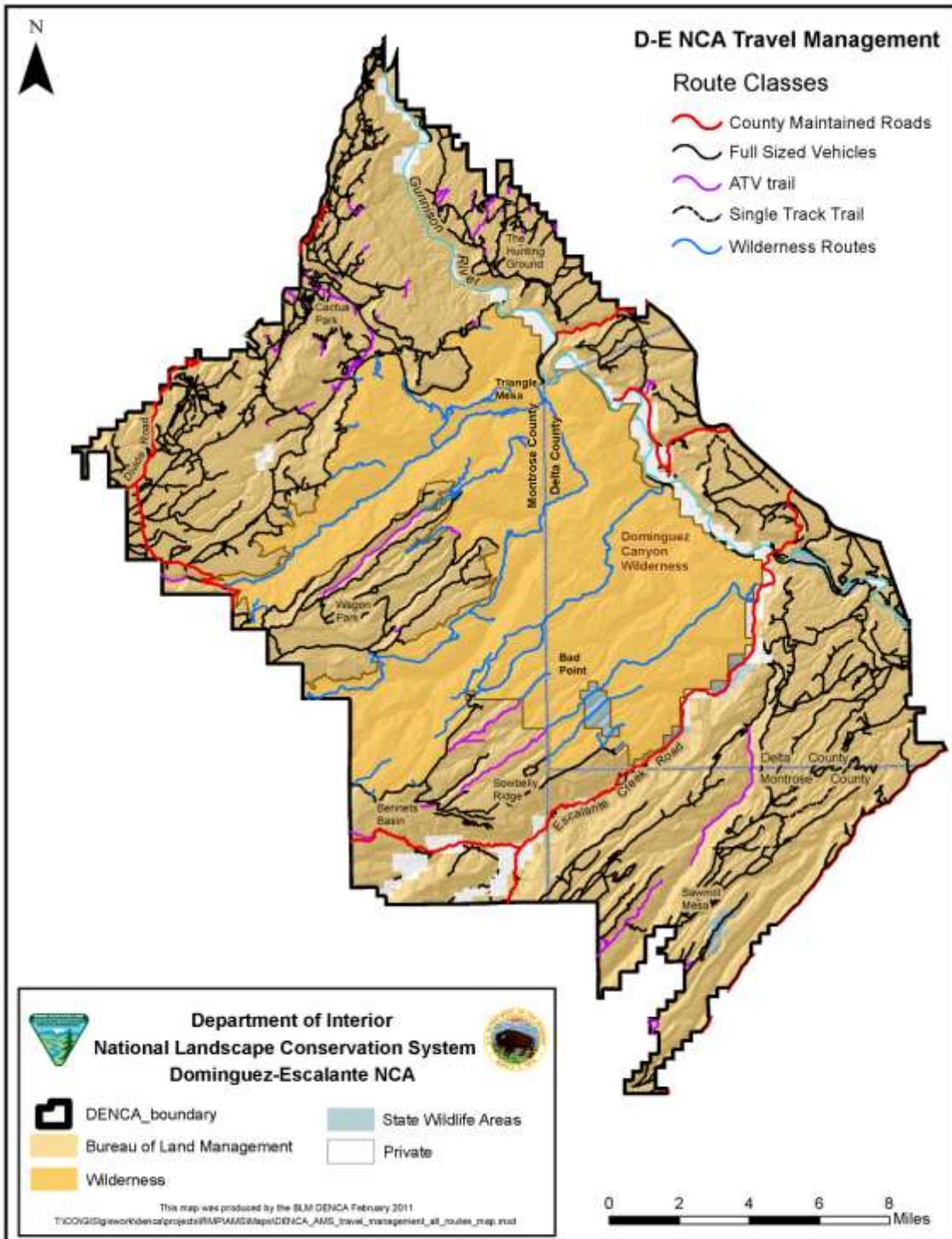
Current Condition:

The current system of linear transportation features has developed over time as a result of administrative access, resource use needs, and recreation access and use.

TABLE 3.5-I TYPE OF ROUTE

Type of Route	Miles
County Maintained (roads)	63
BLM Maintained (County non-maintained roads)	18
BLM Maintained (roads)	14
BLM Not Maintained (County non-maintained two-track)	55
BLM Not Maintained (two-track)	484
ATV-width Trails	51
Single Track	15
Wilderness Routes	89

MAP 3.5-I ALL ROUTES



Administrative routes in the NCA were created to provide access to monitoring sites, rights-of-ways, and access to private lands. Generally, rights-of-ways are concentrated along US Hwy 50, along the railroad and river and along Ninemile Hill. There are rights-of-ways for county roads, communication lines and facilities, water developments and private property access. (In the following pages, see Map 3.5-2 showing route system and rights-of-ways polygon and line.) See the lands and realty section for more on rights-of way.

Routes created for resource use access vegetation treatment projects, livestock grazing infrastructure and operations, mineral materials sites, and forest products extraction. (See Map 3.5-3 showing route system and stock ponds, and polygon data and firewood cutting areas.)

Recreation routes were created (authorized and unauthorized) in response to demand for trail-based recreation. As demand for trail-based recreation (especially OHV riding) increased, the number of routes increased. The routes developed for administrative and resource uses provided primary access routes throughout most of the NCA. These primary access routes were designed and constructed for administrative and resource uses, not for recreation. As a result, the routes were not providing the recreation experience the users are looking for. Over time, recreation use extended, connected, or pioneered new routes from the administrative and resource use routes.

This pattern of route development has resulted in high route densities in areas where the administrative and resource use routes provided access for recreation use. See attached route density map.

Current management:

Executive Order 11644 and CFR (43 CFR Part 8340) both require the BLM to designate all public lands as open, closed, or limited for OHV use. The following table shows current area designations in the NCA as designated in the UFO and GJFO RMPs.

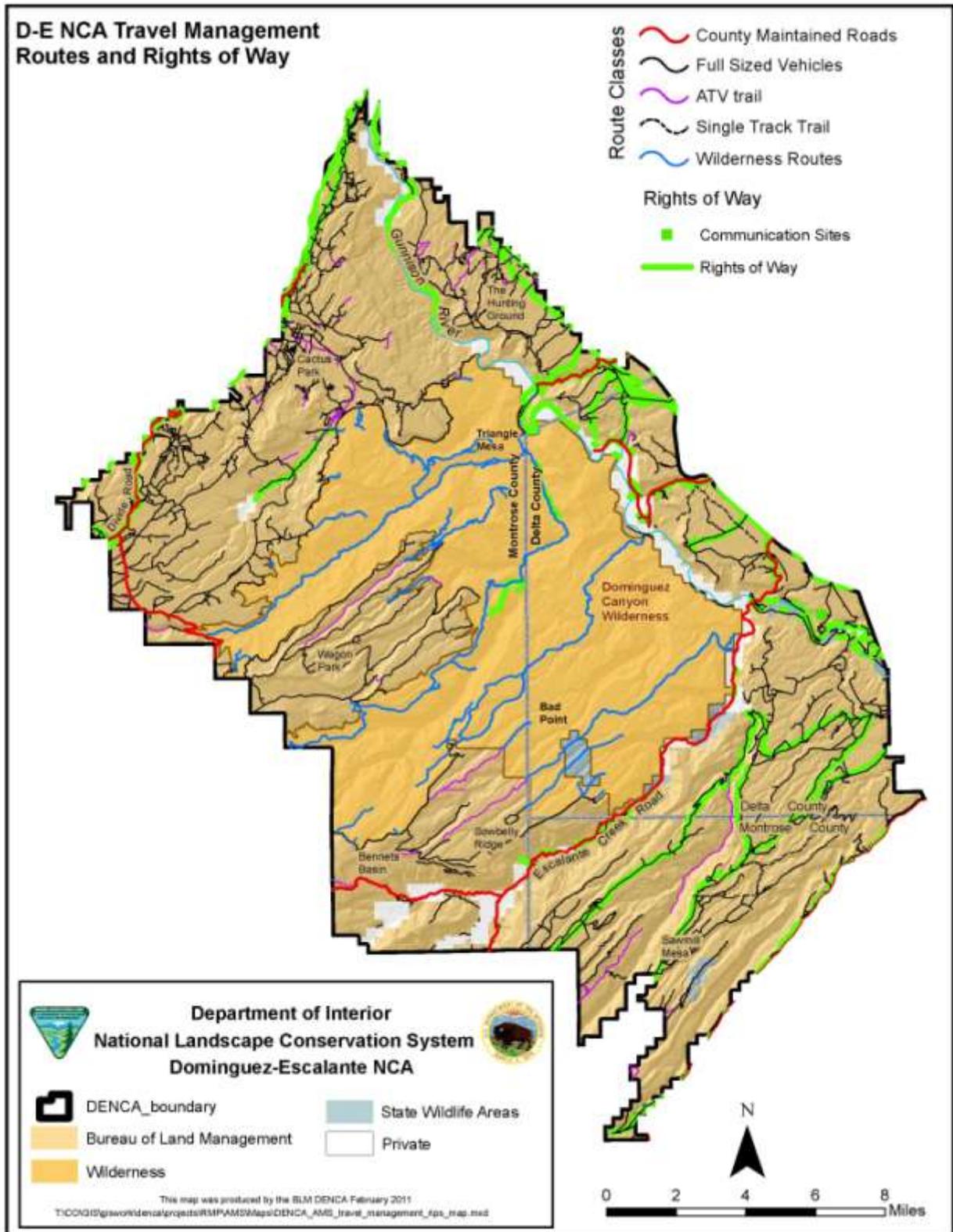
TABLE 3.5-2 CURRENT AREA DESIGNATIONS

Area Designation	Acres
Closed	69,041
Limited to Designated Seasonal 12/1 – 4/30	14,653
Limited to Designated	4,981
Limited to Existing Seasonal Closure (12/1 – 5/31)	1,028
Limited to Existing	88,944
Open	31,332

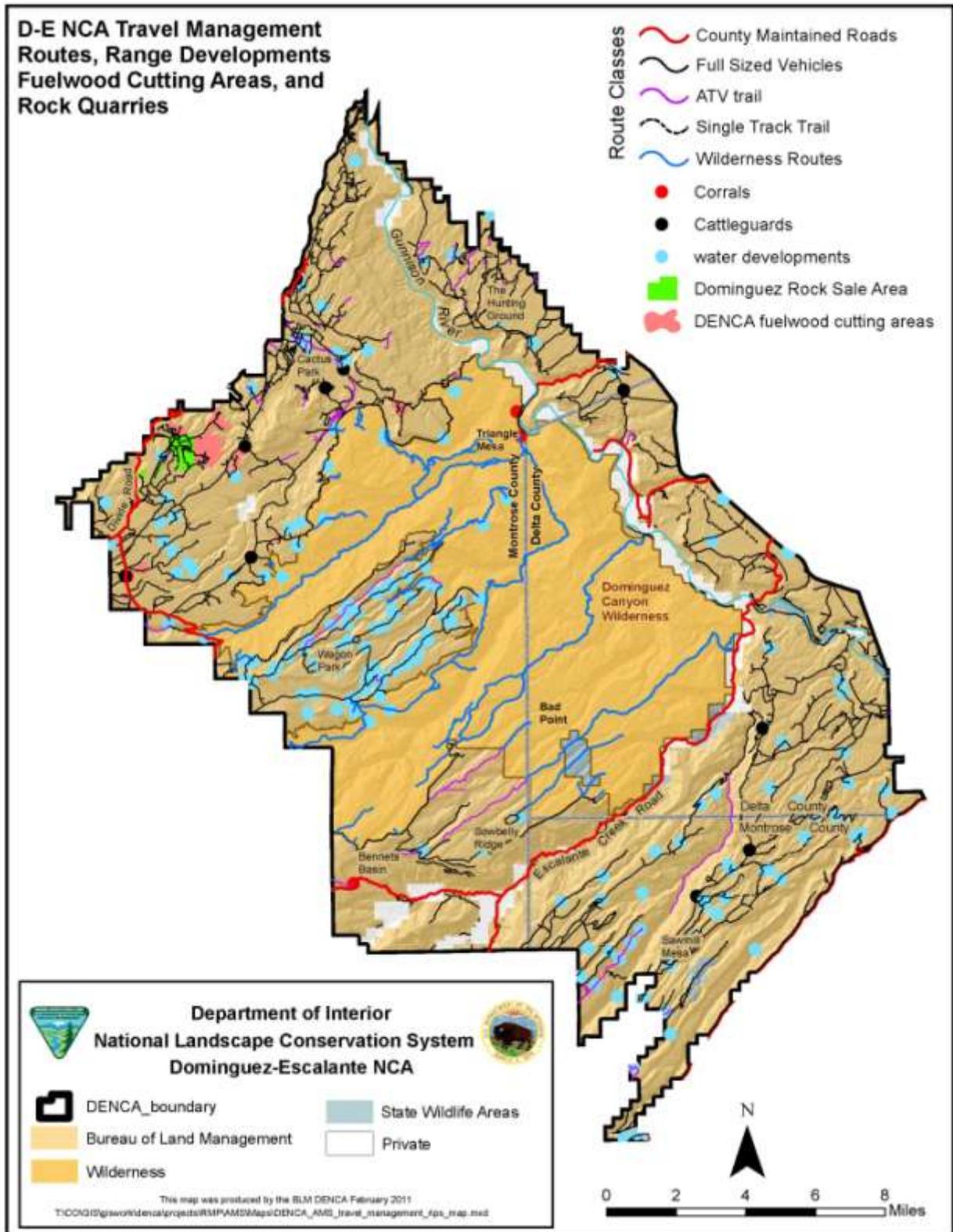
See Map 3.5-4 Off Highway Vehicle Designations

Area designations are designed to support other resource management objectives. The acres designated as closed support wilderness management. The areas designated as limited to designated support vegetation, wildlife and hydrologic resources in the Escalante Canyon ACEC. The areas limited with seasonal closures support wildlife management for big game winter range and consistency with adjacent U.S. Forest Service seasonal road closures.

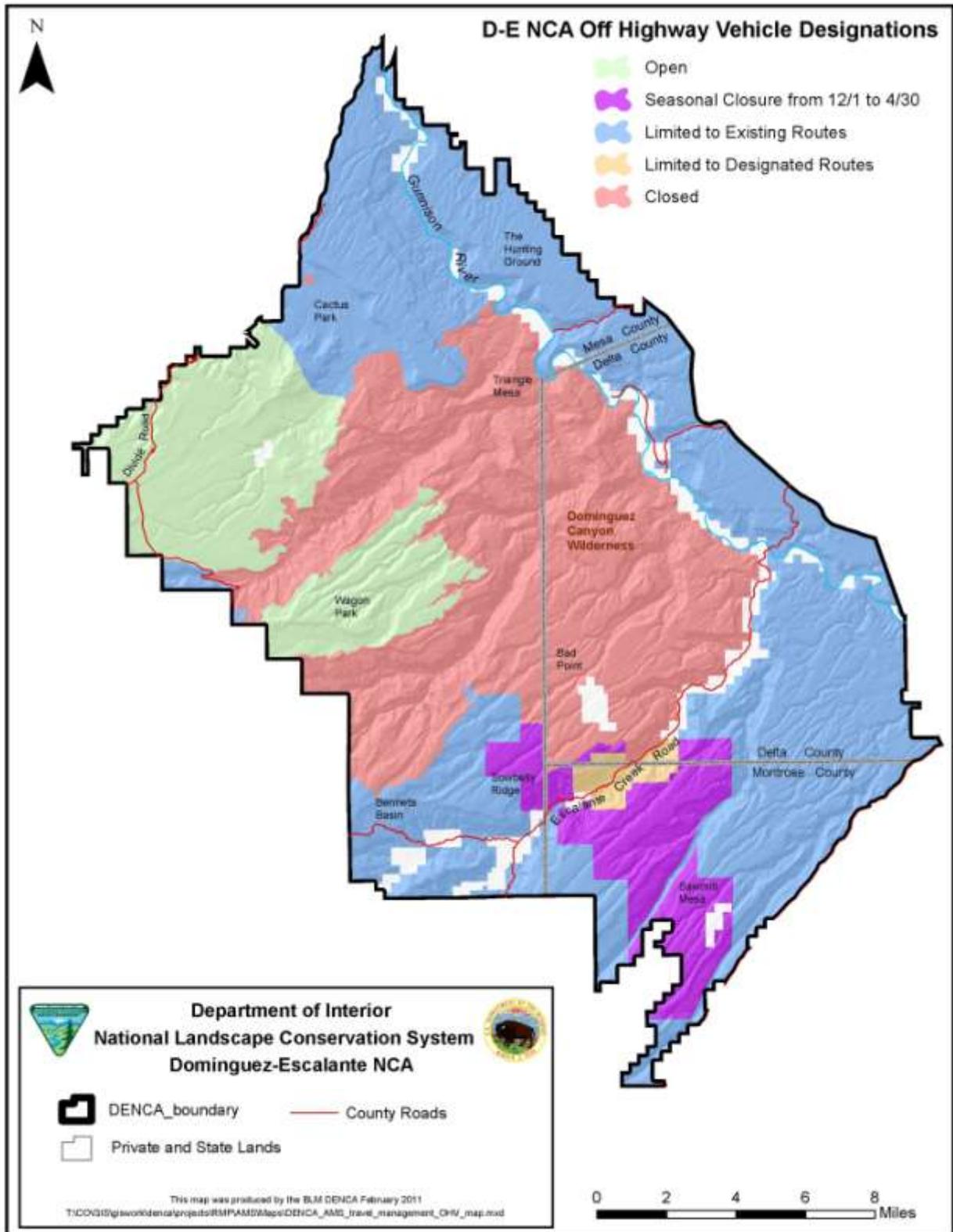
MAP 3.5-2 ROUTE SYSTEM AND RIGHTS-OF-WAYS



MAP 3.5-3 ROUTE SYSTEM , RANGE DEVELOPMENTS AND FIREWOOD CUTTING AREAS



3.5-4 OFF HIGHWAY VEHICLE DESIGNATIONS



Trends:

Trends in the travel system are related to and driven by resource needs and demands. As needs for administrative access changes, the nature of the travel system changes (i.e. new routes are created and/or existing routes become unnecessary). By far the most significant influence on the trends of the travel system is related to OHV recreation use. The dramatic increase in OHV use, both recreational and administrative, over the past two decades has resulted in levels of demand not anticipated by travel management decisions in either current RMP.

Future demand on the travel system is anticipated to increase, primarily from recreation. Much of the population growth in the Grand, Gunnison and Uncomphagre Valleys is associated with the proximity of public lands for recreation. Studies of the migration patterns of the past two decades suggest people are moving into the local communities partly because of the recreation opportunities on public lands ("Prosperity in 21st Century West: Sonoran Institute:). Demand on the travel system from administrative and resource use is expected to remain at historic levels.

Adequacy of Current Management:

Current management is not adequate to meet the requirements of the NCA legislation or the changing uses on the landscape. The NCA legislation directs all motorized travel to be limited to designated routes. Currently, motorized travel is only designated to the short camping spur routes in the Escalante Canyon ACEC. Additionally, the legislation states there will be no areas designated as Open for motorized travel. Currently, there is over 31,000 acres designated Open.

Twenty years ago, the travel system was designed to respond to the needs of rights-of-ways, grazing allotments, mineral development (gravel and flag stone quarries) and firewood collection. At that time, ORV use and recreation was not anticipated. Since then, trail-based recreation has emerged as a dominant use, with unplanned trails spinning off from the older, established routes. Lack of specific recreation objectives combined with increased demand for recreation (primarily OHV recreation) has resulted in user-created routes that have created conflicts with other resources and conflicts between recreation users. These user-created routes lead to soil erosion, sedimentation of water sources, damage to vegetation, damage to cultural resources, fragmentation of wildlife habitat, conflict with livestock grazing, and conflicts between different recreation users (i.e. those looking for non-motorized activities and those looking for motorized activities).

Management Opportunities:

Travel and transportation decisions required during the planning process are made at two different levels. First, as mentioned above, BLM is required to designate all BLM-administered public lands as *open*, *closed* or *limited* for motorized travel. The NCA legislation language directed BLM to not manage any lands within the NCA as *open*, restricting the planning decision to either areas *closed* or *limited* to motorized travel. The legislation further directed the BLM to complete a travel management plan that limits motorized travel to designated routes. This language restricts BLM's decision to areas "limited to designated routes," removing the option of "limited to existing routes."

The second level of decisions BLM is required to make is route-by-route designations for motorized use. For each route, the BLM must decide if the route is open or closed to motorized use. If open for motorized use, what type of use (motorcycles, ATVs, or full-sized vehicles)? Included with the decision on which routes are open or closed and, if open, to which uses, the BLM is required to determine whether the open routes should be classified as:

- a road,
- a primitive road or
- a trail.

Along with the required decisions, the BLM has the opportunity to address other travel and transportation management issues in the planning process. These include:

- The opportunity to create a truly comprehensive travel plan. As mentioned above, comprehensive travel and transportation planning and management is an interdisciplinary approach where all resource and resource uses are supported by the travel decisions. Development of specific objectives for all resource programs prior to consideration of travel and transportation decisions will ensure the travel system supports each resource program's objectives.
- The opportunity to designate routes for non-motorized uses, including bicycles, foot travel, horses, etc.
- The opportunity to restrict use in areas or on specific routes seasonally.
- The opportunity to designate routes for administrative use only. (e.g. agency use or authorized use through permits)
- The opportunity to assign maintenance levels to all routes designated as open and classified as a road, primitive road or a trail.
- The opportunity to define over-the-snow travel and set conditions of use.
- The opportunity to define criteria for new trail development.

3.6 Forest and Woodland Products

Current Condition

A stand is the basic management unit used in the field of forestry. Stands are delineated based on vegetative community, stand age and land use. Because the BLM has traditionally placed little emphasis on its timber resources (as compared to the Forest Service), very little stand-level data exists within the Dominguez-Escalante National Conservation Area (D-E NCA). Data that does exist dates back to the mid-1980s, when public demand for fuel wood prompted the BLM to conduct stand-level assessments throughout western Colorado. According to this data, there are 95,954 acres (approximately 46 percent of the NCA) of forest or woodlands within the NCA. Of this acreage, the vast majority (99 percent) consists of Piñon-juniper woodlands. Acreage data is displayed below.

The distinction between forests and woodlands are that woodlands are more open than forests with more light reaching the ground. Woodlands also do not have the potential (because of water limitations in the NCA) to form a closed canopy. For the purposes of the AMS, anything consisting of Pinyon or Juniper as a woodland and anything composed of commercial forest species (i.e. Ponderosa pine, Douglas fir, aspen) as a forest. This is because Pinyon or Juniper rarely forms a closed canopy forest.

MAP 3.6-1 STOCKING RATES FOR WOODLAND STANDS

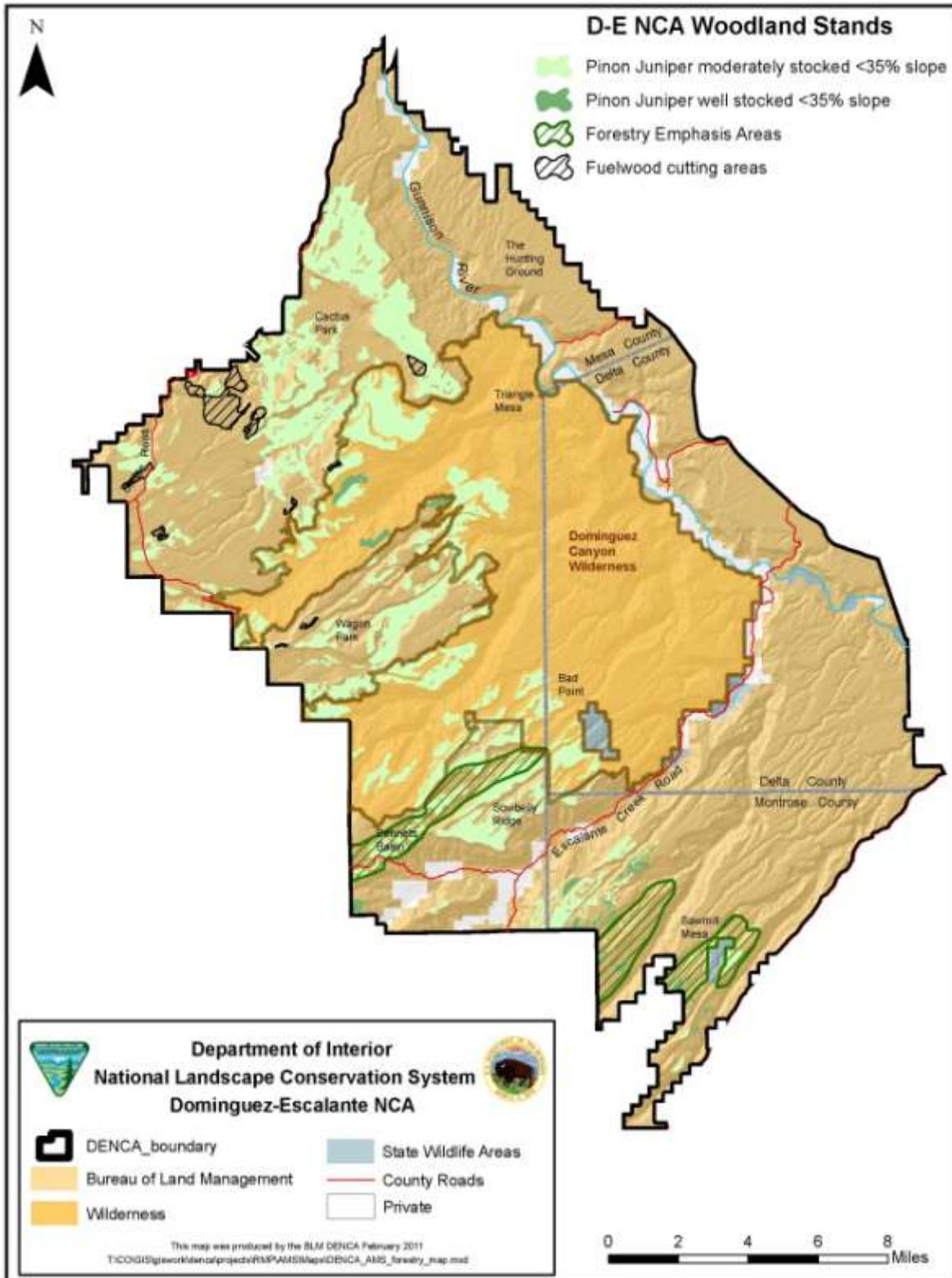


TABLE 3.6-1 FOREST ACREAGE

Forest or Woodland Classification	Acres	% of NCA
Douglas Fir moderately stocked	28	0.0%
Piñon Juniper moderately stocked	41587	19.8%
Piñon Juniper poorly stocked	52619	25.1%
Piñon Juniper well stocked	1228	0.6%
Ponderosa pine moderately stocked	153	0.1%
Ponderosa pine poorly stocked	285	0.1%
Sub alpine fir moderately stocked	54	0.0%
Total	95,954	45.7%

Stocking is a measure of the percent of growing space occupied by trees. Well stocked stands are more dense, with more growing space occupied. Poorly stocked stands are more open, with less growing space occupied. Stocking rates are usually the result of water availability and secession.

Forest Resources

According to the data displayed above, only a small proportion of the NCA is forested (dominated by trees other than Piñon or juniper). The total acreage of land dominated by the commercial species Douglas Fir, Ponderosa Pine or Sub Alpine Fir amounts to 520 acres, or 0.2 percent of the NCA. These forest stands are concentrated in the upper elevations of the NCA, near the BLM's boundary with the US Forest Service. In these higher elevations, small stands of commercial tree species can also be found in riparian areas where more water is available. Because the NCA contains such sparse forest resources, commercial timber harvests of commercial species have not been done in the NCA. Additional information on the current state of stands of Ponderosa Pine can be found in the fire/fuels section of this document.

Piñon-Juniper (from UFO AMS)

The Piñon-juniper vegetation type occurs between 5,800 and 7,500 feet, and occupies more of the planning area than any other vegetation type. The Piñon-juniper woodland is dominated by Utah juniper and Colorado Piñon in varying proportions depending on soil, slope aspect, and elevation. There is typically a sparse and variable understory that may contain remnant shrubs like Wyoming big sagebrush (*Artemisia tridentata wyomingensis*), birchleaf mountain mahogany, Utah serviceberry, snakeweed (*Gutierrezia sarothrae*), yucca (*Yucca harrimaniae*), potato cactus (*Opuntia fragilis*), muttongrass, Indian ricegrass (*Achnatherum hymenoides*), and bottlebrush squirreltail. Primary forbs in this type are western tansy mustard (*Descurainia pinnata*), scarlet globemallow (*Sphaeralcea coccinea*), rock goldenrod (*Petroradia pumila*), lobeleaf groundsel (*Packera multilobata*), and numerous species of Penstemon, Arabis, Astragalus, Lomatium, Erigeron, and Machaeranthera.

Montane Forest

The montane forest vegetation type generally occurs between 7,500 and 9,500 feet in elevation, and makes up a small component of the planning area. This vegetation type typically includes ponderosa pine (*Pinus ponderosa*), Douglas fir, (*Pseudotsuga menziesii*), and aspen (*Populus tremuloides*), both singularly and in combination with one another. Soils and fire history influence where and in what combinations these species occur. They also influence the understory vegetation. Many of the mountain shrub species are also found in montane forest. The more common species include birchleaf mountain mahogany (*Cercocarpus montanus*), Utah serviceberry (*Amelanchier utahensis*), Gambel oak (*Quercus gambelii*), Rocky Mountain juniper (*Juniperus scopulorum*), black chokecherry (*Prunus virginiana*), and roundleaf snowberry (*Symphoricarpos rotundifolius*). The herbaceous component is generally sparse, but contains many of the same grasses and forbs found in the mountain shrub vegetation type described below.

Subalpine Forest

The subalpine forest vegetation type occupies only a minor portion of the planning area above 9,500 feet elevation. Engelmann spruce (*Picea engelmannii*) and subalpine fir (*Abies lasiocarpa*) characterize this vegetation type. Aspen may be present in some areas as well, but is typically successional to the spruce and fir. The understory in this vegetation type is generally sparse and dominated by sedges, whortleberry (*Vaccinium myrtillus*) and arnica (*Arnica cordifolia*). Mountain brome (*Bromus marginatus*), Thurber fescue (*Festuca thurberi*), slender wheatgrass (*Elymus trachycaulus*), wild strawberry (*Fragaris* spp.), and an abundance of other forbs may occur where the tree canopy lets light through.

Woodland Resources

According to the table above, 105,628 acres (approximately 50 percent of the NCA) consists of Piñon-juniper woodlands in the NCA. These woodlands have been used for fuel wood and Christmas tree harvesting for many years prior to the NCA's designation. Within the Grand Junction Field Office side of the NCA, specific fuel wood cutting areas were designated until 2009. At this time, these fuel wood cutting areas were temporarily closed due to resource degradation. These designated areas total 1,264 acres of Piñon-juniper woodlands, many of which have been severely degraded as a result of sustained fuel wood harvesting and road proliferation. Within the Uncompahgre Field Office side of the NCA, there were no designated fuel wood cutting areas at the time of NCA designation in 2009. Instead, the entire field office was considered open to fuel wood harvesting until the activity was closed within the NCA upon designation in 2009.

Of the aforementioned acreage of Piñon-juniper woodlands, approximately 42,815 acres are moderately or well stocked, which means that these acres contain a high enough density of trees to make fuel wood harvesting possible. The table below displays the number of acres within and outside of the wilderness. Acres within the wilderness are likely off limits to forest product harvesting because of their inaccessibility. In addition, acres outside of the wilderness that are on slopes greater than 35% are likely to be off limits to forest product harvesting because of inaccessibility and potential soil erosion.

TABLE 3.6-2 STOCKING RATES FOR WOODLAND RESOURCES, BY ACRES

Forestry Resource	Acres
Piñon juniper moderately or well stocked in NCA	42,815
Number of these acres inside wilderness	14,398
Number of remaining acres on slopes greater than 35%	8,675
Piñon juniper potentially harvestable	19,742

Of the acreage that would be potentially harvestable, a significant proportion was impacted by Ips kill, a naturally occurring insect infestation that targeted Piñon pines within the NCA in the early 2000s. As a result of this infestation, a smaller number of acres is likely harvestable for fuel wood in the near future. This particularly impacted the benches near the southwest boundary of the wilderness area.

In addition to fuelwood harvests, parts of the NCA have been used for Christmas tree harvesting. Much of the GJFO side of the NCA continues to be open to this activity, while there are no designated Christmas tree harvesting areas on the UFO side of the NCA.

Current Management

Both the Grand Junction and Uncompahgre Basin RMPs call for their planning areas to manage forest and woodlands for timber production. The objectives from each plan are stated below.

Management Objectives of Grand Junction Resource Management Plan

- To manage the suitable Piñon-juniper woodlands and commercial forest land to maintain stand productivity and to help meet fuel wood and saw timber demands.

Management Objectives of Uncompahgre Basin Resource Management Plan

- Suitable commercial forest lands and Piñon-juniper woodlands will be managed for sustained yield production within the allowable cut restrictions determined by the Timber Production Capabilities Classification inventory.

The Uncompahgre Basin RMP designated specific areas to be managed for intensive woodland product harvests, within the limits of sustained yield. These intensively managed areas occupy 6,587 acres within the UFO side of the NCA. While the RMP called for these areas to be intensively managed, very few commercial harvests ever took place in these areas due to a decline in the demand for fuel wood.

The Grand Junction RMP also called for a Timber Production Capabilities Classification inventory and sustained yield forest and woodland product harvesting. Specific firewood harvesting areas were designated under this plan. Within the NCA, 1,264 acres were designated for firewood harvesting and remained open until 2009.

The interim management plan for the D-E NCA mandated that firewood cutting within the NCA would only be allowed (pending completion of the new NCA RMP) where such harvesting would improve forest or woodland health. As a result of this guidance, the NCA was made off limits to fuel wood harvesting

until the new RMP could be completed. Christmas tree harvesting, on the other hand, was specifically allowed to continue pending completion of the new NCA RMP, because it occurs at such a small scale.

Adequacy of Current Management

The current guidance provided by the Grand Junction and Uncompahgre Basin RMPs is insufficient to provide the level of resource protection mandated in the Omnibus Public Lands Management Act of 2009. New guidance is needed that emphasizes the protection and enhancement of the natural resources within the NCA, as it relates to forest and woodland product harvesting. Given the indirect resource damage caused by road proliferation in firewood cutting areas, it is unlikely that intensively managed forest product harvesting areas will be designated in the NCA in the future. However, if such uses can be shown to improve forest or woodland health they would likely be permissible. Non-commercial fuel wood harvesting may also be permissible if their continued use can be justified as an educational experience regarding the traditional uses of the area.

Management Opportunities

The emphasis placed on resource protection and enhancement in the Omnibus Act suggests that timber product harvesting will not likely be a major resource use in the NCA in the near future. The following outcomes regarding forest and woodland products should be sought:

- Identification of particular areas where fuel wood harvesting would benefit forest/woodland health and would not lead to road proliferation or collateral resource damage. This may include the collection of dead and down fuel wood in old vegetation treatments or Piñon/juniper harvests in areas where Piñon and/or juniper invasion is unnaturally occurring.
- Rehabilitation/restoration of degraded firewood cutting areas on the GJFO side of the NCA.
- Consider whether Christmas tree harvests could lead to forest health impacts.

3.7 Land Tenure and Land Use Authorizations

Current Condition

Land Use Authorizations: The Uncompahgre Field Office (UFO) portion of the planning unit currently has 22 land use authorizations including the following:

- Four powerlines, of which 2 are distribution lines (7.2 kV) and 2 are transmission lines (115 & 345 kV)
- Four telephone lines and a fiber optic cable that is attached to the top of the towers of one of the Tri-State powerlines
- One gas pipeline
- An irrigation water pipeline, an irrigation ditch (Long Park), and the Storts Ditch Diversion pump station.
- One communication site (serving the Union Pacific RR)
- One railroad
- Several county roads and state highway: includes 4 authorizations for county roads and the Escalante Bridge and 3 authorizations for the state highway projects and facilities.

In general, the rights-of-ways (ROWs) are located adjacent to the highway and county roads and are primarily situated between Highway 50 and the Gunnison River. The primary exception to this being the county roads which traverse the planning area in the southern (UFO) portion in a northeast-southwest trend, providing access between Highway 50 and the Delta area to the Uncompahgre Plateau and Forest Service lands. A ROW corridor exists east of Highway 50.

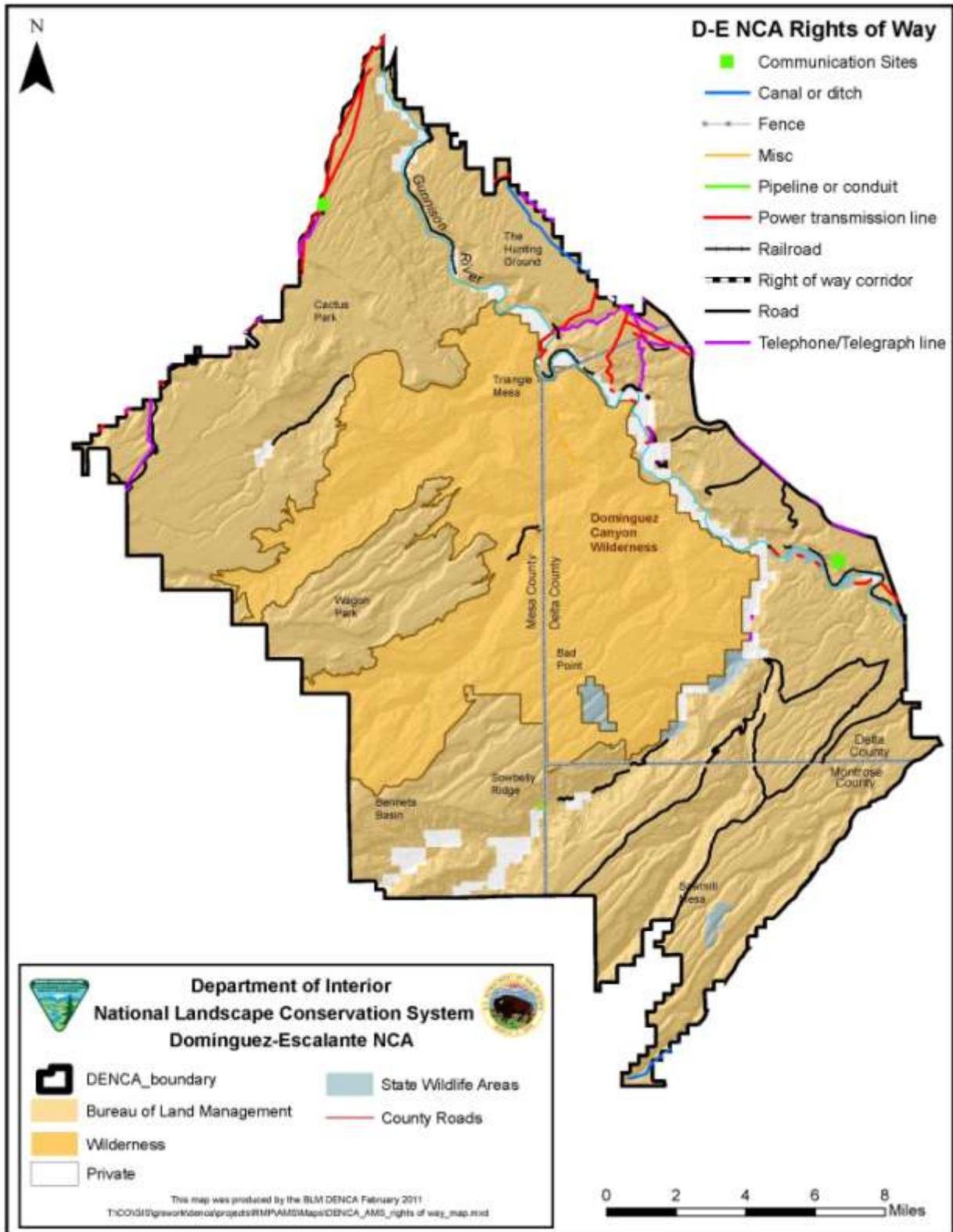
The majority of the land use authorizations located within the portion of the D-E NCA, located within the GJFO boundary, are located along Highway 141, the Gunnison River, and Highway 50. There are 21 land use authorizations within this portion of the NCA. The 21 existing right-of-ways and other land use authorizations include:

- Five power lines
- Two telephone lines
- One fiber optic line
- Two fences
- Six roads
- One railroad, and
- One multiple-facility communication site (Ninemile Hill), includes three separate ROWs.
- One easement to the federal government that provides access across private land to the wilderness area.

A communication site management plan has been developed and approved for the communication site. Some of the facilities in the D-E NCA were built prior to the passage of the Federal Land Policy Management Act (FLPMA) and do not have a right-of-way (ROW) grant associated with them. There is an old irrigation ditch located along the Gunnison River near the Bridgeport Trailhead. This irrigation ditch was authorized prior to the passage of FLPMA. There is also an easement granted to the federal government for access on the Dominguez Trail. See Map 3.7-1 Rights of way



MAP 3.7-1 RIGHTS OF WAY



Within D-E NCA, there are only three rights-of-way that are common to both the GJFO and UFO:

- COC 38389 - Grand Valley Power
- COC 53622 - Qwest
- COC 0 93947 - UPRR

Withdrawals/Land Classifications: Bureau of Reclamation withdrawals exist along the Gunnison River (the Dominguez Dam Project) as well as Power Site Classifications located along the river within both the UFO and the GJFO portions of the NCA. There are Public Water Reserves scattered throughout the southern (UFO) portion of the planning area primarily located south and east of Escalante Creek, and in the Cactus Park area within the GJFO. All BOR claims associated with the dam are being given up or revoked.

Land Tenure: No land exchanges, sales or other land conveyances have occurred within the planning area in recent years. To date, the BLM has acquired two parcels totaling 423 acres within the NCA boundaries, through Land and Water Conservation Fund purchases.

Current Management

Land Use Authorizations: The Grand Junction Field Office RMP applied designations of unsuitable or sensitive for public utilities to certain pieces of the NCA. Unsuitable was defined as “areas that contain resources of concern that would be damaged by public utility projects.” Sensitive was defined as “areas containing resources of concern that could probably be protected from undue damage with adequate mitigation and proper project design.”

- 1,000 acres in Cactus Park as unsuitable for Cultural Resources Management
- 19,178 acres in Dominguez Canyon as unsuitable for Recreation Resources Management
- 640 acres at Bridgeport Trailhead as Sensitive for Recreation Resources Management
- 30, 798 acres in Dominguez Canyon as unsuitable for Wilderness management
- acres in the Gunnison Gravels ACEC as unsuitable for Geologic Resources
- 8,960 acres in the Gunnison River Corridor as unsuitable and another 9,040 acres as sensitive for riparian values

Unawep Canyon was also designated as a half-mile wide public utility corridor for telephone and small electrical lines.

The Uncompahgre Basin RMP did not specifically identify land use authorization objectives or decisions. Thus, decisions on land use authorizations would generally be made by considering whether the proposed activity would be consistent with decisions for other resources, especially where those decisions call for protective management.

UFO currently has one pending ROW application for the existing UPRR communication site to authorize the facility and amend it. Within the past several years, UFO has only authorized two new rights-of-way and one renewal of an existing authorization.

Withdrawals/Land Classifications: The existing withdrawals, classifications and reserves will be managed as is until revoked by the appropriate agency. Upon revocation, the lands will be managed consistent with the objectives of adjacent or comparable lands. The BOR has requested a revocation of the Dominguez Project withdrawal. BLM is currently processing the revocation.

Land Tenure: The BLM will continue to pursue opportunities to acquire non-federal lands and interests in lands, within and along the boundaries of the NCA, through exchange, donation, or purchase from willing sellers. (GJFO is working on a land acquisition project in the Gunnison River corridor, of approximately 400 acres, from a willing seller.)

Adequacy of Current Management Direction

Land use authorizations or potential land tenure adjustments are considered on a case-by-case basis. While some protection is provided by the Interim Management Plan direction (i.e., “Generally, proposals for new rights-of-way should not be processed until the plan is completed”), the current planning direction predates the NCA designation and as such, provides piecemeal protections for certain resources but does not examine the NCA as a whole. It may not achieve protection for each of the purposes and as such, would not be considered to provide comprehensive consideration of the NCA as an NLCS unit.

In addition, the terminology of “public utilities” does not necessarily correspond to current terminology on land use authorizations—some current applications are similar in type and impact but may not be public utilities by definition, which causes confusion as to whether they should be managed under that decision. Updated terminology that focuses more broadly on land use authorizations in general should be developed.

The lack of direction from the current Uncompahgre Basin RMP is also a concern for the same reasons noted above, as it affects the ability to make decisions for the NCA considering resources holistically.

Management Opportunities

Land Use Authorizations: In general, the overall desirability of facilities in the NCA should be analyzed, and the need for exclusions and avoidance areas addressed in the RMP. These decisions should be made based on a consideration of the resources listed as purposes in the NCA’s legislation.

Demand for land use authorizations within the southern (UFO) portion of the planning area is not anticipated to increase in the near future. However, there is potential for renewable energy projects such as wind and solar ROWs, should those type of projects be allowed within the NCA. The RMP should consider whether these types of projects would be compatible with protection of the resources listed as purposes in the NCA’s legislation.

There is the potential for some of the older ROW facilities to be improved to ensure ongoing and full protection of the environment and sensitive resources. At the time of renewal or amendment of existing facilities new requirements that could increase the protection of sensitive areas should be closely considered. These types of improvements could include requiring the use of non-reflective wire during upgrades or replacement of existing above ground power or telephone lines. Irrigation ditches that are causing erosion on steep slopes could be piped, lined, or otherwise improved. Special consideration should be given when processing actions on existing facilities that may not be currently using the best available technology and best management practices. Placement of new facilities should also be done in accordance with the best available technology and methods.

The establishment of ROW corridors along the highways that border the NCA and county roads within the NCA should be considered. Designating a ROW buffer zone adjacent to existing routes could be

considered. Co-locating ROW facilities to the greatest extent practicable is a best management practice that would reduce the cumulative amount of surface disturbance in the NCA.

Limitation on the dimension of new facilities such as roads should also be considered. The size and type of access roads should be restricted to meet the objectives of the setting being managed. Requiring the placement of short low voltage utility lines below ground should also be considered to reduce impacts to the view shed and setting.

Land Tenure: Acquisition of non-federal lands [through exchange or purchase] particularly along river and creek corridors should be actively pursued as well as any inholdings within the NCA. Known trespass situations will likely provide opportunities for future land exchanges within the planning area.

Forecast

The BLM will continue to negotiate land exchanges, acquisitions and easements within the planning area on a case-by-case basis as staff and priority workload allow. As opportunities present themselves, each prospect will be reviewed with careful consideration for public benefit.

Although this is an anecdotal observation, the rugged and charismatic landscapes that make up NCAs may have been avoided in the past for location of utilities and other developments. As the amount of undeveloped land in the west decreases, these areas do look like “blank spots on the map” to individuals not familiar with the NCA designation, who may be looking at a broad scale at areas remaining available for development. The importance of clear, consistent guidance that is tied to the purposes of the legislation will become increasingly important in making good future decisions regarding location of facilities and developments in the NCA.



Chapter 4 – Special Designations

4.1 Areas of Critical Environmental Concern

An Area of Critical Environmental Concern (ACEC) is defined in FLPMA, Section 103(a), as an area within BLM-administered public lands where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards. BLM regulations for implementing the ACEC provisions of FLPMA are found in 43 CFR 1610.7-2(b).

Special management attention refers to management prescriptions developed during preparation of an RMP or RMP amendment expressly to protect the important and relevant values of an area from the potential effects of actions permitted by the RMP, including proposed actions deemed to be in conformance with the terms, conditions, and decisions of the RMP (BLM Manual 1613). Such management measures would not be necessary or prescribed if the critical and important features were not present.

To be eligible for designation as an ACEC, an area must meet criteria for both **relevance** and **importance**. An ACEC possesses significant historic, cultural, or scenic values, fish or wildlife resources (including habitat, communities, or species), natural processes or systems, or natural hazards. In addition, the significance of these values and resources must be substantial in order to satisfy the importance criteria.

Restrictions that arise from an ACEC designation are determined at the time the designation is made, and are designed to protect the values or serve the purposes for which the designation was made. Goals, standards, and objectives for each proposed ACEC will be identified, as well as general management practices and uses, including necessary constraints and mitigation measures. The RMP will identify a reasonable range of alternatives that will include current management for existing ACECs, as well as management for proposed ACECs.

Current ACECs

Two ACECs currently exist in the D-E NCA for a total of 2,296 acres, were established prior to the area's designation as an NCA.

Escalante Canyon ACEC

The Escalante Canyon ACEC was designated in the Uncompahgre Basin RMP (UB RMP) of 1989 for its unique recreational opportunities and for the existence of rare plants and plant associations. This ACEC encompasses 2,291 acres in Delta and Montrose counties and borders the Dominguez Canyon Wilderness.

The potholes area of Escalante Creek is located within this ACEC, which provides unique recreational opportunities in the form of extreme kayaking, swimming and camping. The UB RMP specifically mentions as a purpose of this ACEC increased public awareness about the dangers of recreation in and around the potholes. Current recreation facilities in this area describe these dangers, and appear to have been successful in cleaning up the area by restricting camping to designated locations and by providing recreationists with restroom facilities.

A number of BLM special status plant species and rare plant associations exist in the seeps that line the canyon's walls and on the benches above Escalante creek. ACEC stipulations direct camping and motorized recreation away from these unique and rare plants and plant associations.

Gunnison Gravels ACEC

The Gunnison Gravels ACEC was designated in the Grand Junction Field Office RMP (GJFO RMP) of 1987 for its unique geological resources. This ACEC encompasses approximately 5 acres in the Cactus Park area of the D-E NCA. Figure 4.1-1 shows some sketch maps depicting stages of river and stream channel diversions. Figure 4.1-1 River and Stream Channel Changes, Lohman

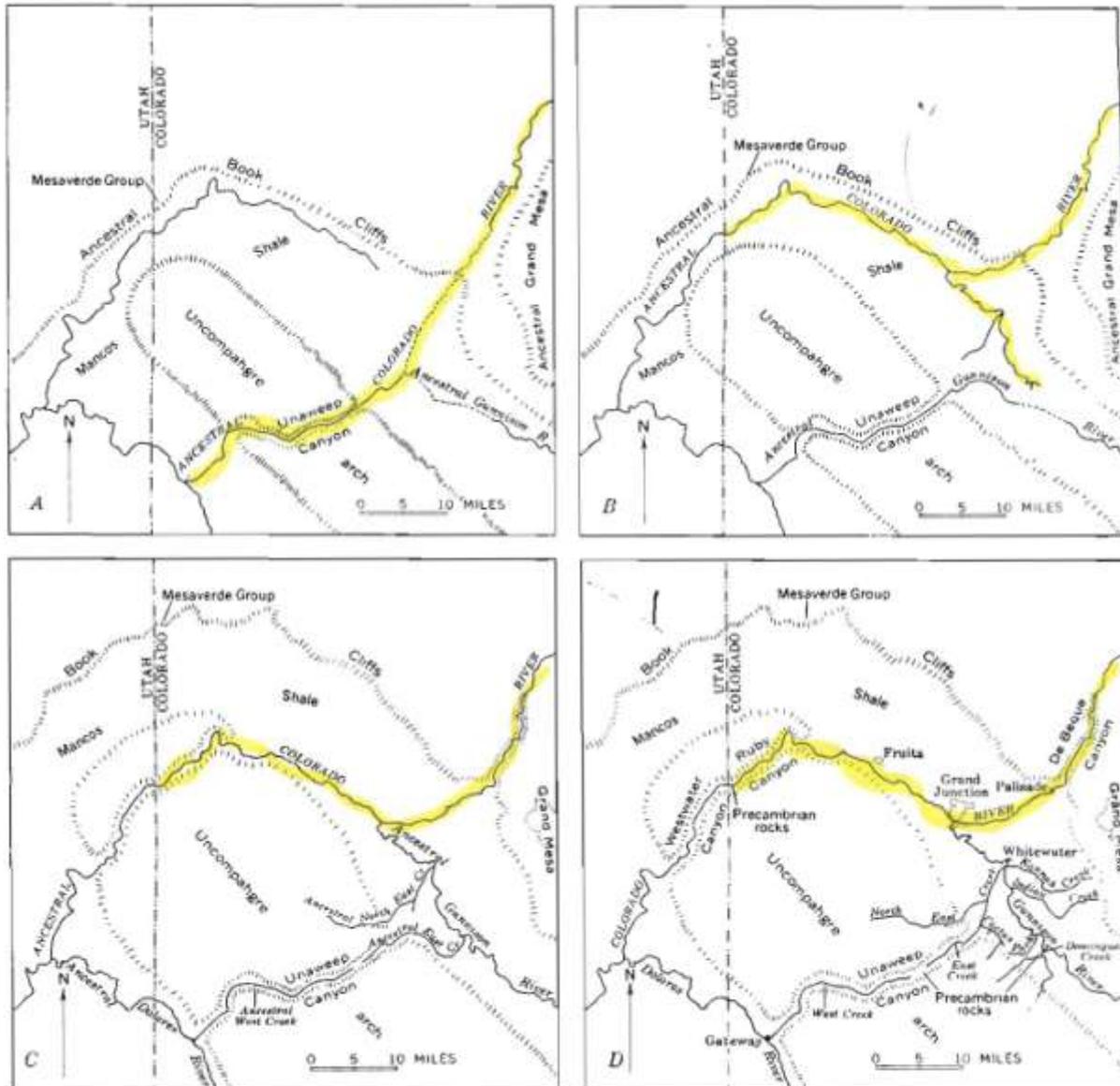


FIGURE 28.—Sketch maps of a part of western Colorado and eastern Utah showing probable drainage pattern and topographic features at four successive stages of development. Solid drainage lines taken from Moab and Grand Junction, Utah-Colorado, topographic maps of the Army Map Service; dashed drainage lines are hypothetical. A, just prior to piracy of ancestral Colorado River; B, after piracy of ancestral Colorado River and just prior to piracy of ancestral Gunnison River; C, after piracy of ancestral Gunnison River; and D, present drainage pattern, after renewed uplift of the Uncompahgre arch and piracy of East Creek.

The surficial geology of the site is composed of the Triassic Kayenta Formation sandstone overlain by Quaternary Alluvium composed of approximately 12,000 cubic yards of sand and gravel. These sediments are believed to have been deposited by the ancestral Gunnison River and possibly the Colorado River 1-5 million years ago before they changed flow directions to their present day alignments.

The river gravel deposit is one of only a few such deposits on the Uncompahgre Plateau along the course of the ancient river system. The ancient river system is believed to have changed to present day alignments due to uplift of the Uncompahgre Plateau with its very hard, erosion resistant rock diverting the river flows into the softer, more easily eroded rocks of the Mancos Shale (Lohman, 1965).

Management Opportunities

Given the restrictive language in the Omnibus Act that established the D-E NCA, it is unclear whether the continued management of these two areas as ACECs is warranted. The Omnibus Act withdrew the NCA from entry for mineral extraction, as well as from entry, appropriation or disposal. The act also only allows uses within the NCA that further the 14 purposes for which the NCA was established. As a result, most surface disturbing activities are already precluded within the NCA.

Table 4.1-I - ACECs in the Planning area

NAME AND DESIGNATION	AREA (IN ACRES)	VALUES
Gunnison Gravels	5	Geological significant site that shows old riverbed of Colorado and Gunnison Rivers.
Escalante Canyon	2,291	Potholes recreation area and canyon seeps with special status species vegetation.

Gunnison Gravels ACEC

Given the restrictions imposed by the Omnibus Act in regard to mineral extraction and other surface disturbing activities, continued management of this area as an ACEC may not be required for the protection of its unique geological resources. However, recreational OHV use in the area has led to degradation of the resources in this area. The fence that was built to protect this ACEC was torn down, and OHV use on a hill adjacent to the ACEC has led to soil erosion that has degraded the scientific value of the area. This suggests that continued protection of the area may be warranted given the potential conflicts between recreation use and geological resource protection. Projects are underway to reduce future incidents.

Escalante Canyon ACEC

The continued management of this area as an ACEC may still be warranted in order to provide a balance between continued recreation usage of this area and the protection of the unique plants and plant associations that are found in the area. Surveys conducted in 2010 by the Colorado Natural Heritage Program (CNHP) identified the continued presence of BLM special status species in this area, including the federally threatened Colorado hookless cactus. In addition, the area continues to be used by

recreationists and local landowners claim that visitation has increased since the area was designated as an NCA. This emphasizes the importance of a balance between recreation, as well as livestock grazing, and biological resource protection in this area of the NCA.

Additional ACEC Opportunities

Additional areas warranting designation as ACECs will be identified during the planning process for the D-E NCA. These designations will only be used where general management provides inadequate protection for the NCA's important site-specific resources. The designation of ACECs could be used as a management tool to protect important resources in areas where recreation usage is anticipated to increase over the life of the D-E NCA's RMP. This is especially true of exceptional specimens of resources for which the NCA was designated (i.e. geological, cultural, paleontological, natural/biological, and scenic resources).

One drawback of the designation of ACECs is that they may lead to increased visitation, which can in turn lead to resource degradation as a result of the "loving it to death" paradigm. Opportunities for combined ACECs that protect multiple resources should be identified during the planning process. This approach could allow for restrictive management for sensitive resources without highlighting to the public the specific resources that the ACEC was created to protect .

No additional ACEC nominations have been received from the public.

4.2 National Trails and Back-Country Byways

Old Spanish National Historic Trail:

In 2002, Congress designated the Old Spanish National Historic Trail. The trail runs from Santa Fe, NM to Los Angeles, CA. Variations of the Trail cross parts of New Mexico, Colorado, Utah, Nevada, Arizona, and California. The North Branch of the Trail crosses the D-E NCA.

As part of the UFO, GJFO, and the D-E NCA planning efforts, a survey of the Trail is being completed. The BLM anticipates the findings of the survey will better defined the historic alignment of the Trail through the D-E NCA.

A comprehensive trail plan that would include the North Branch is anticipated in the near future. There are no specific management decisions for the Trail in either the Uncomphagre or the Grand Junction Field Office RMPs. There is one interpretive kiosk along Hwy 50 near Wells Gulch that provides information on the Trail.

There are ongoing efforts to add historical and archeological interpretation sites to the trail outside the NCA in the GJFO. Access points have been developed in the Gunnison Bluffs area north of the NCA. There are several active partners working with the BLM on trail issues, including Mesa County, the Colorado River Front Commission, the City of Grand Junction and the Old Spanish Trail Association.

Management Opportunities

There are a variety of management opportunities for the trail. Existing partnerships provide opportunities for leveraging funding and other support to develop and interpret the trail.

The results of the findings of the survey and the subsequent allocation the cultural resources associated with the trail will determine the extent of interpretation of the trail resources. At the very least, the trail can be interpreted through an auto tour along U.S. Hwy 50. Along with interpretation of the OST, there is an opportunity to interpret the Ute Indian trails that preceded the development of the OST.

Another management opportunity identified in the Feasibility Report was managing the trail for retracement experiences. The trail could be developed to provide visitors the opportunity to travel the trail as the early traders did.

Scoping comments for the NCA plan included comments from both Grand Junction and Delta about the desire for a trail that connects the two communities. One management consideration might be the combination of managing the Historic Trail with a connective trail for the two communities.

4.3 Wild & Scenic Rivers

Current Condition:

As part of the planning process, the BLM is required to conduct a Wild and Scenic River (WSR) study. The first step of the WSR study is to inventory stream segments and determine whether they are eligible for inclusion in the National Wild and Scenic River System (NWSRS). The D-E NCA includes lands from both the Uncompahgre and Grand Junction Field Offices, and both offices have completed eligibility studies as part of their individual RMP revision processes. Eligibility determinations have been completed for the rivers and streams within the D-E NCA through these two eligibility studies.

The initial step in determining eligibility was to generate an inventory of all rivers and streams within the evaluation area. Every known river with a perennial or intermittent flow regime was identified, using a variety of Bureau of Land Management and other data sources. Some waterways were further segmented based on differences in level of development, physiographic character, land status, or the existence of in-channel diversions or dams.

The river segments were then evaluated to determine whether they meet the dual criteria of being free-flowing and possessing one or more outstandingly remarkable values (ORVs), as defined in the Wild and Scenic Rivers Act. Eligible segments were preliminarily classified as *wild*, *scenic*, or *recreational*, based on level of human development along the river corridor.

After evaluating the stream segments in the D-E NCA, six streams separated into ten segments were determined to be free-flowing and possessed one or more outstandingly remarkable values necessary for Wild and Scenic River eligibility.

MAP 4.3-1 WILD AND SCENIC RIVERS

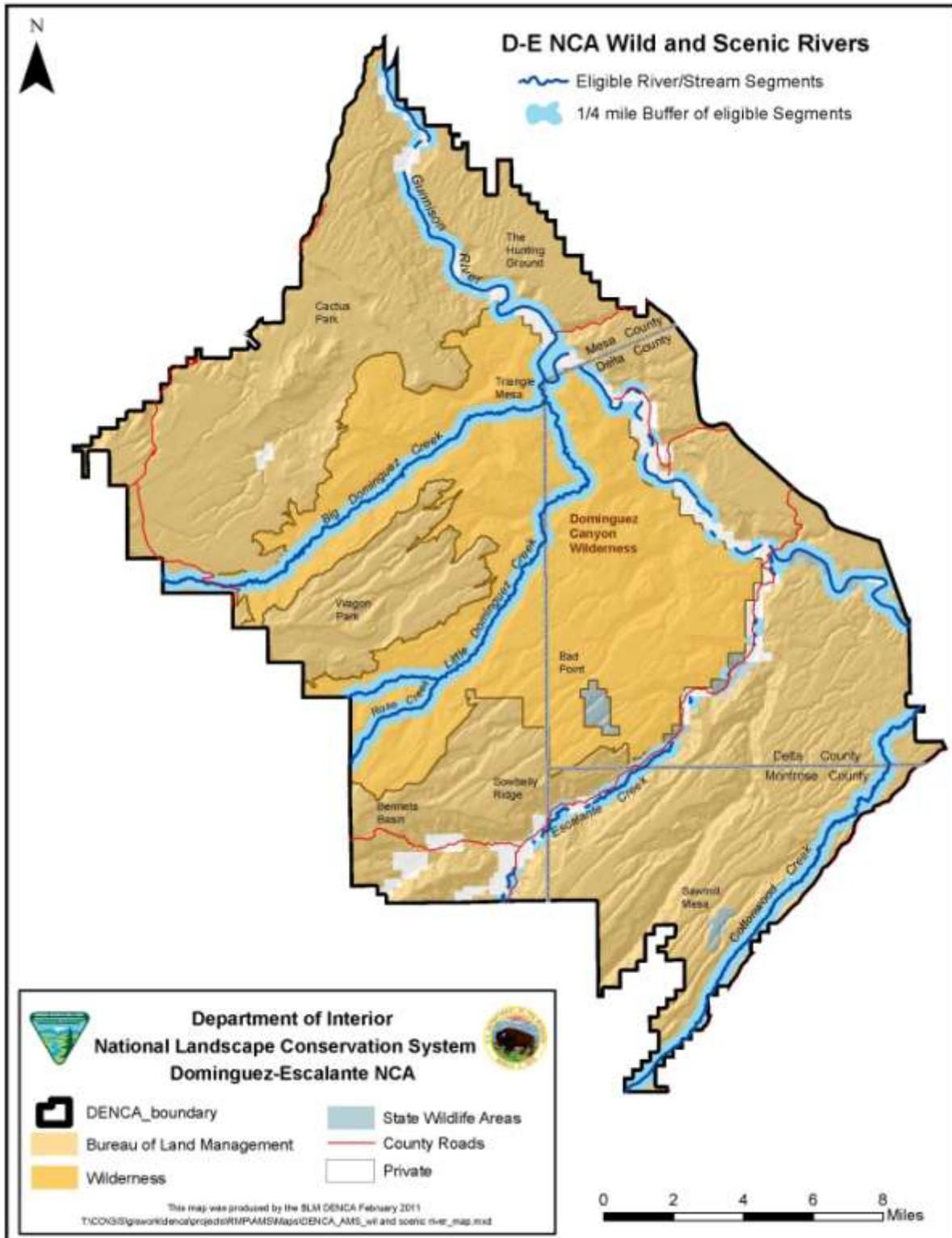


TABLE 4.3-1 STREAM SEGMENTS, MILES, ORVs AND CLASSIFICATIONS

Stream Segment	BLM miles	Outstandingly Remarkable Values	Tentative Classification
Gunnison River Segment 3 (UFO Report)	14.02	Recreational boating, Fish, Cultural, Historical	Recreational
Gunnison River Segment 1 (GJFO Report)	13.45	Recreational boating, Fish, Cultural, Historical	Recreational
Big Dominguez Creek Segment 1 (GJFO Report)	15.86	Scenic, Recreational, Wildlife, Geological, Cultural	Wild
Big Dominguez Creek Segment 2 (GJFO Report)	0.78	Scenic, Recreational, Wildlife, Geological, Cultural	Scenic
Little Dominguez Creek Segment 1 (GJFO Report)	13.14	Scenic, Recreational, Wildlife, Geological, Cultural	Wild
Little Dominguez Creek Segment 2 (GJFO Report)	2.45	Scenic, Recreational, Wildlife, Geological, Cultural	Scenic
Rose Creek (UFO Report)	3.90	Scenic	Wild
Escalante Creek Segment 1 (UFO Report)	8.45	Scenic, Recreational, Geologic, Wildlife, Vegetation	Scenic
Escalante Creek Segment 2 (UFO Report)	0.90	Fish, Wildlife	Recreational
Cottonwood Creek (UFO Report)	18.27	Vegetation	Scenic

A summary report has been compiled that combined the findings of the D-E NCA streams from both the GJFO and UFO Eligibility Reports. The Gunnison River and Rose Creek flow from the UFO into the GJFO. As a result, that part of the Gunnison River that is within the UFO was evaluated in the UFO Eligibility Report and that part of the Gunnison River that is in the GJFO was evaluated in the GJFO Eligibility Report. There were inconsistencies in the ORV findings between the two reports. Rose Creek was evaluated in the UFO report, but not in the GJFO report. To create a consistent summary report for the NCA, errata sheets were prepared for both the GJFO and UFO Eligibility Reports that resolved the inconsistencies.

In February 2011, the Colorado Natural Heritage Program was asked to reevaluate their rarity ranking of vegetation communities. The result was changes to the global ranking of two riparian vegetation communities that were included as ORVs in the UFO Eligibility Report. The Narrowleaf Cottonwood/strappleaf willow-silver buffaloberry and the Fremont Cottonwood/skunkbush sumac rarity

rankings changed to G3 rankings (globally vulnerable). These changes in rankings meant both vegetation communities no longer qualified as ORVs. An additional errata sheet has been prepared for the UFO Final Eligibility Report and the D-E NCA Summary Report for Wild and Scenic River Eligibility to reflect these changes.

Current Management:

A Wild and Scenic River (WSR) study was not completed during the Uncompahgre Basin RMP or the Grand Junction RMP; therefore there are no objectives and decisions for managing wild and scenic rivers in either plan. In accordance with BLM's non-degradation and enhancement policy (BLM Manual 8351 Wild and Scenic Rivers), eligible segments will be managed to protect the qualities identified in the Eligibility Reports until a suitability determination is made as part of the NCA RMP.

Management Opportunities:

As required by the Wild and Scenic Rivers Act and BLM planning policy, a determination of suitable or not suitable will be made as part of this planning process. The purpose of the suitability phase of the study process is to determine whether the wild and scenic river values identified in the eligibility reports are best protected using Wild and Scenic Rivers protections or other protective management tools available through the land use planning process. A suitability study is designed to answer these questions:

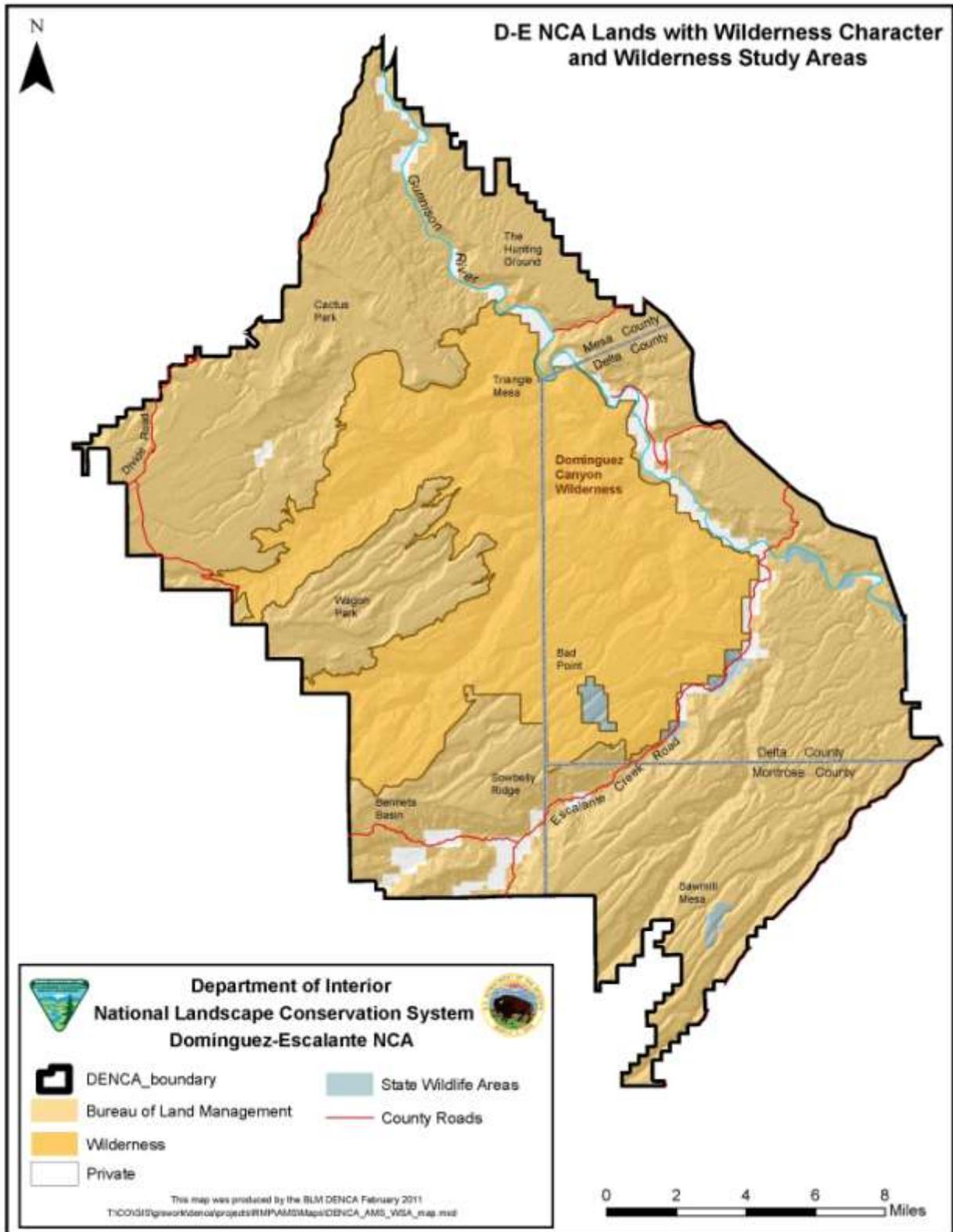
1. Should the river's free-flowing character, water quality, and ORVs be protected, or are one or more other uses important enough to warrant doing otherwise?
2. Will the river's free-flowing character, water quality, and ORVs be protected through designation? In answering this question, the benefits and impacts of WSR designation will be evaluated and alternative protection methods considered (e.g. Area of Critical Environmental Concern, Special Recreation Management Area, Wildlands designation, etc.)
3. Is there a demonstrated commitment to protect the river by any nonfederal entities that may be partially responsible for implementing protective management?

4.4 Wilderness Study Areas

Current Condition

In 1964, Congress passed the Wilderness Act, establishing a national system of lands for the purpose of preserving a representative sample of ecosystems in a natural condition for the benefit of future generations. Until 1976, most land considered for, and designated as, wilderness was managed by the NPS and US Forest Service. With the passage of FLPMA in 1976, Congress directed the BLM to inventory, study, and recommend which lands under its administration should be designated wilderness. Through this process, one area, Dominguez Canyon, in the DENCA was identified as a WSA. In 1991, the BLM issued a Final Wilderness Study Report which recommended 73,888 acres of the Dominguez Canyon WSA as suitable for inclusion in the National Wilderness Preservation System.

MAP 4.4-I WILDERNESS STUDY AREAS



In 2009, Congress acted on BLM's recommendation and designated the Dominguez Canyon Wilderness. Not all the WSA lands were included in the wilderness designation. As a result, 3,033 acres of WSA remain. Until Congress acts on the remaining acres and either designates them as wilderness or releases them for other uses, this area will be managed under the BLM Handbook H-8550-1, Interim Management Policy for Lands under Wilderness Review (IMP).

Under the IMP, WSAs must be managed in a manner that would not impair the suitability of the area for preservation as wilderness and to prevent unnecessary or undue degradation. Except for grandfathered uses and valid existing rights, permitted activities in WSAs are temporary uses that create no new surface disturbance and do not involve placement of permanent structures.

Grazing is the only grandfathered use allowed in the WSA. Grazing is managed under three different permits (Gibbler Common, Wagon Park, and Dominguez). Under the current Grand Junction Field Office Resource Management Plan, the WSA is closed to the public for motorized use. Motorized use is authorized for grazing permittees in accordance with the IMP. Authorized motorized use is conducted in a manner and to a degree it was conducted prior to WSA designation. The WSA in the Grand Junction Field Office is designated as Visual Resource Management (VRM) Class I. There is no VRM class designation for the WSA in the Uncompahgre Field Office.

The non-impairment standard in IMP provides adequate management guidance for the WSA.

Chapter 5 – Social and Economic Concerns

5.1 Tribal Interests

Background

The BLM has traditionally viewed its responsibility toward Native American concerns and tribal interests within the narrow scope of consultation on specific issues, typically involving development and individual NEPA actions on public lands. The BLM is mandated to consult with Native American tribes concerning the identification of cultural values, religious beliefs, and traditional practices of Native American people that may be affected by actions on federal lands.

The BLM has developed several sets of guidelines for consulting with Native American groups and evaluating cultural resources, with an emphasis on traditional use values. BLM manuals 8160 and H-8160-1 provide consultation requirements and procedural guidance to ensure that the consultation record demonstrates, "that the responsible manager has made a reasonable and good faith effort to obtain and consider appropriate Native American input in decision making" (BLM 2002). BLM Handbook H-8110 offers guidelines for determining authorized uses of a cultural resource, including considerations for traditional use values.

Tribal Outreach

Traditionally, the Grand Junction and Uncompahgre Basin Field Offices of the BLM have consulted with the following three federally recognized Ute tribes on specific projects and RMPs:

- Southern Ute Indian Tribe, based in Ignacio, Colorado

- Ute Mountain Ute Indian Tribe, based in Towaoc, Colorado
- Ute Indian Tribe (Uintah and Ouray reservation), based in Fort Duchesne, Colorado

All three of the above listed tribes were formally invited to become cooperating agencies during RMP development for the D-E NCA. As of March 7, 2011, none of the three tribes have signed memoranda of understanding (MOU) with the BLM to become formal cooperating agencies during the development of the D-E NCA RMP.

In 2007, the BLM initiated the Ute Ethnohistory Project. This project actively involved Ute Cultural Resource staff and traditional leaders in the identification of issues and concerns for resource management plans (RMPs) for the BLM’s Grand Junction and Uncompahgre Field Offices, as well as for the Dominguez-Escalante NCA. Through this project, the BLM has determined that the Ute tribes consider the D-E NCA as part of their ancestral homeland. For a more thorough description of the Ute Ethnohistory Project, see the cultural resource section of this document.

One of the outcomes of these consultations was a recommendation that the BLM engage a wider number of tribes in order to gauge their interest in ongoing NEPA and RMP development. As a result, BLM staff from the D-E NCA and Grand Junction Field Office sent letters to the tribes listed in Table 5.1-1. As of March 7, 2011, the BLM had received feedback suggesting these tribes would like to be actively engaged in ongoing NEPA or RMP development for the Grand Junction Field Office or Dominguez-Escalante NCA.

TABLE 5.1-I TRIBES CONTACTED DURING RMP PROCESS

Organization	City	State
Comanche Nation of Oklahoma	Lawton	OK
Eastern Shoshone Tribe	Fort Washakie	WY
Hopi Tribe	Kykotsmovi	AZ
Jicarilla Apache Nation	Dulce	NM
Kiowa Tribe of Oklahoma	Carnegie	OK
Navajo Nation	Window Rock	AZ
Ohkay Owingeh (Pueblo of San Juan)	San Juan	NM
Paiute Indian Tribe of Utah	Cedar City	UT
Pueblo de Cochiti	Cochiti	NM
Pueblo of Pojoaque	Santa Fe	NM
Pueblo of Santa Ana	Santa Ana Pueblo	NM
San Ildefonso Pueblo	Santa Fe	NM
Santa Clara Pueblo	Espanola	NM
Shoshone-Bannock Tribes	Fort Hall	ID
Standing Rock Sioux Tribe	Fort Yates	ND

Table 5.1-1: Additional tribes engaged during RMP development for the D-E NCA and Grand Junction Field Office.

Tribal Interests

Places (as opposed to sites) of traditional cultural importance to Native American people may include:

- Locations associated with traditional beliefs (such as tribal and human origins, oral tales and tribal history, religious and ceremonial practices, and past or present significance and use)
- Ancestral habitation and burial sites
- Trails
- Areas where food, mineral, and water resources possessing healing attributes or used for subsistence may be obtained.

Some of these locations may also be regarded as sacred by particular Native American tribes or individuals. Under the framework of existing laws (including the National Historic Preservation Act of 1966, the American Indian Religious Freedom Act of 1978, Executive Order 13007 regarding Indian Sacred Sites, and the Native American Graves Protection and Repatriation Act of 1990), the BLM must take into account the effects of federally linked projects or land uses on these types of locations.

To date, one of the major issues emerging from the Ethnohistory Project is the conservation of “heritage landscapes” -- large areas that embody not only physical cultural sites, but natural environmental conditions that have remained relatively unaffected by change over the last 100 years. These landscapes could be used by Ute tribal members for field workshops and resource gathering areas. Information learned from the Ute Ethnohistory Project will continue to inform the D-E NCA planning process and encouraged better consultation with Native Americans who may have an interest in lands managed by the D-E NCA.

5.2 Public Safety

Visitor safety is a high priority for the NCA. The BLM is required to address abandoned mines, target shooting, hazardous waste, and other public hazards. The primary concern for public safety within the planning area is fall hunting, when roads and trails are crowded with hunter traffic, at the same time there are hikers, mountain bikers, equestrians and ATV riders.

Many hunters camp and hunt on the nearby national forest, however, the routes of ingress and egress occur through the D-E NCA. This increase in traffic leads to route degradation, speed concerns, unsafe driving conditions, and off-road vehicle tracks. The increase in visitation adds additional complexity as camping spots become scarce, littering increases, and resource damage increases from illegal wood cutting.

Visitors are numerous within areas known as Cactus Park, Divide Road, and Bridgeport. Cactus Park is a high volume multiple use area specifically for mountain bikers on the Tabeguache Trail and the numerous OHV routes. The peak use time for Cactus Park is during the summer months and hunting seasons. One active dinosaur quarry is also located within Cactus Park. Similar to Cactus Park, the Divide Road area brings many campers, hunters, and OHV riders. Peak use time on Divide Road is during

the summer months, and hunting seasons. A BLM managed campground is also located off of Divide Road, and a nearby trailhead for hikers heading into the Dominguez Canyon Wilderness. The Bridgeport area is primarily used by hikers and horseback users to access the lower portion of the Dominguez Wilderness. In FY09, the access bridge into the wilderness monitored 7,287 visitors. This number is exceptionally high as use is limited to foot and horseback traffic.

Major Safety Concerns in the Planning area

Potholes Area

The Potholes Recreation Area in Escalante Canyon was long known as a summer party site, where the mixture of beer and water led to a number of drownings over the years. In 2005, the Uncompahgre Field Office implemented supplementary rules to regulate conduct at several Escalante Canyon recreation sites: the Escalante Bridge boat launch site, Escalante Canyon Area off Critical Environmental Concern (ACEC) and the Potholes Recreation Area.

The Federal Register notice of March 8, 2005 noted that the Potholes site receives significant recreational use due to its scenic qualities and the presence of eroded potholes in Escalante Creek, which are used for swimming. The practice of visitors diving and jumping from heights off 30-100 feet off surrounding cliffs into the holes “has resulted in numerous accidents and at least five deaths over the last 12 years.”

Resource damage included cutting trees down for bonfires; shooting or throwing glass bottles around the camping and swimming areas; leaving trash; and improper disposal of human waste. Underage drinking and drug use was associated with overnight camping and bonfire parties.

Under the new rules:

- Camping restricted to designated and signed campsites.
- No target shooting or shooting of paintball weapons.
- No cutting of live or dead trees.
- No burning of wood pallets or construction debris.
- Designate the Potholes area as a day use only area, banning diving or jumping from rocks into the water.
- No discharge off firearms off any kind, including those used for target shooting or paintball.
- No glass containers for beverages, food or other items.
- No public nudity.
- No overnight camping at the swimming area.
- No wood fires or bonfires.
- A requirement for campers, picnickers and others to clean up trash, litter and debris.
- Penalties called for trial before a U.S. Magistrate and fined up to \$100,000 or jail up to 12 months, or both.

UFO law enforcement say compliance has dramatically improved, reporting far fewer problems.

Target Shooting

While there are no designated target shooting areas within the planning area, target shooting is generally allowed on public lands. The planning area has several unofficial shooting areas in old barrow pits, gravel pits, and other disturbed areas where there is a history of such use. Cleanup of targets, shell casings, and trash is required. Due to public safety concerns, shooting is specifically prohibited at developed recreation sites and in other posted areas.

Hazardous Materials

There are no approved hazardous waste disposal facilities within the planning area. Hazardous material is defined as any material that, because of its quantity, concentration, or physical or chemical properties, may pose a real hazard to human health or the environment. Hazardous materials include flammable, combustible, toxic, poisonous, infectious, and corrosive materials, oxidizers, aerosols, biohazards, and compressed gases.

Hazardous materials may legitimately be brought onto BLM-administered lands during authorized weed and insect control or resource development projects. Hazardous materials used for weed and insect control include herbicides, algaecides, and pesticides. The majority of illegal dumping activity within the planning area involves solid waste, which is problematic regardless of whether hazardous materials are involved.

In 2009, multiple individuals were caught, arrested and prosecuted for burning copper wire in Rattlesnake Gulch -- a hazardous material situation.

Abandoned Mines

BLM staff have identified three abandoned mines in D-E NCA and have closed all three. The planning area never had commercial-scale mining – most abandoned mine sites could be characterized as prospect work.

Search and Rescue

Search and Rescue's have seen an increase within D-E NCA since the NCA designation. This increase is similar to the increase in SAR's for the nearby MCNCA once it was designated as an NCA. In 2010, the types of SAR's varied including a technical rope rescue for a trapped dog, lost hikers, missing person searches for suicidal subjects (2), overdue hunters and motorized recreationists.

Cultural Resource Protection

Over the last two years, BLM law enforcement has had an increase in cultural resource vandalism and investigations, particularly rock art vandalism near the popular Dominguez Canyon trail within the wilderness area. This trail receives considerable use and many of the rock art panels are near the popular trail. In 2010, officers responded to a report of arrowhead collecting off of Escalante Road. BLM is currently prosecuting a subject for damaging a cultural resource site near Bridgeport Road.

Long Term Camping

Due to the proximity to Grand Junction, CO, the D-E NCA has had issues with long term camping. In 2010, two long-term campsites were discovered in the Cactus Park and Farmers Canyon area. In each case, the campsites were concealed in order to be not detected. Once the campsites were discovered by law enforcement, many issues were noted, including resource damage, human waste issues, household trash, illegal narcotics, and possible hazmat issues. One case involved an anti-government survivalist, who was arrested on an outstanding warrant. When searched, the suspect had seven types of knives concealed on his person or clothing and was also in possession of numerous firearms.

Illegal gatherings

Underage drinking parties have been found in areas such as the Hunting Grounds, Escalante Road, Cactus Park and Divide Road. In 2010, law enforcement noticed an increase in this illegal activity. Bean Ranch Road in particular has seen an increase in underage parties as well as illegal large group gatherings. In September 2010, law enforcement received a tip that an illegal Burning Man festival was to be held near Bean Ranch Road in the NCA. The tip proved valid and law enforcement was able to stop and issue court appearances to the festival organizers.

Marijuana Gardens

Illegal marijuana gardens continue to move east of California into the states of Utah, Nevada, and Colorado. Over the last two years, the state of Colorado has found, prosecuted, and eradicated numerous gardens operating in remote sections of public land. The D-E NCA provides remote settings, natural cover, and water sources for this illicit activity to occur. Although no large gardens have been discovered within the D-E NCA, many small gardens -- 10-100 plants -- have been found and eradicated.

Other crimes

Also in 2009, a commercial landscape business was caught and prosecuted for the theft of hundreds of pounds of moss rock near Rattlesnake Gulch.

D-E NCA Area Violations

Law enforcement officers from GJFO and UFO contributed to the following data, from 2007 to August of 2010:

Drug violations: 11

Liquor Law violations: 5

Dumping incidents: 6

Archeological Resources Protection Act (ARPA) violations: 2

Camping violations: 1

OHV: 3

Theft of government property: 1

Compliance checks: 6

Wildlife violation: 2

Fatality: 1

Assist to other agencies: 2

Arrests: 3

5.3 Social and Economic Conditions

Demographics & Land

The AMS socio-economic report is focused on the Dominguez-Escalante National Conservation Area (D-E NCA), which lies within three contiguous counties in western Colorado. It looks at the three-county region (Mesa, Delta and Montrose), surrounding and influencing what goes on inside D-E NCA. This tri-county region is also known as the Dominguez-Escalante NCA region. The three counties constitute 6,710.47 square miles and have a collective population of 218,827. Mesa County is the largest, in population and land area, followed by Montrose County and then Delta County.

Population Growth

Thanks to a recent energy boom and amenity seekers, the region has been characterized by strong population gains over the last decade. Delta grew 12.5 percent from 2000 to mid-2009, while Montrose and Mesa counties grew by 23.9 and 24.9 percent respectively. From 1990 to 2008, the three-county region grew by 53 percent – well over the national growth rate of 21.9 percent.

That growth speaks well of the region’s growing economic diversity and ability to recover from recessions.

Urban/Rural Mix

Mesa County is a strongly urbanized county, with 84.8 percent of its population living in an urban setting, and only 1.7 percent living on farms or ranches – 13.5 percent living in nonfarm, rural areas.

Montrose County had 46.9 percent of its residents living in an urban setting, and 4.8 percent on farms – 51.7 percent in nonfarm, rural areas. Delta County has 24.7 percent of its residents in urban areas and 6.0 percent living on farms – 60.3 percent living in nonfarm, rural areas. (*Colorado Demography Section, 2000 U.S. Census*)

Federal lands are a major presence (68 percent) in the three-county region, compared to private lands (30.7 percent).

TABLE 5.1-1 FEDERAL LANDS IN D-E NCA REGION

	Delta County, CO	Mesa County, CO	Montrose County, CO	Dominguez- Escalante NCA region
Total Area	734,795	2,137,182	1,434,622	4,306,599
Private Lands	320,164	555,962	447,637	1,323,763

Federal Lands	402,417	1,550,243	975,460	2,928,119
Forest Service	186,327	548,141	326,552	1,061,020
BLM	216,053	980,580	611,827	1,808,460
National Park Service	0	20,383	37,081	57,464
Other Federal	37	1,139	0	1,176
State Lands	8,511	26,131	10,125	44,767
State Trust Lands*	0	1,423	0	1,423
Other State	8,511	24,708	10,125	43,344
Tribal Lands	0	0	0	0
Water	3,703	4,847	1,400	9,950

Federal Payments

State and local government cannot tax federally owned lands, the way they would if the land were privately owned. A number of federal programs (Payments in Lieu of Taxes, or PILT) exist to compensate county governments for the presence of federal lands. These programs can represent a significant portion of local government revenue in rural counties with large federal land holdings. The majority goes to county government and school districts.

TABLE 5.1-2 FEDERAL LAND PAYMENTS IN D-E NCA REGION

	Delta County, CO	Mesa County, CO	Montrose County, CO	Dominguez- Escalante NCA region
Total Federal Land Payments by Geography of Origin (\$)	530,493	3,077,240	2,500,802	6,108,535
PILT	190,240	2,310,390	1,978,608	4,479,237
Forest Service Payments	310,336	643,513	449,698	1,403,548
BLM Payments	21,357	73,685	32,145	127,186
Percent of Total				
PILT	35.9%	75.1%	79.1%	73.3%
Forest Service Payments	58.5%	20.9%	18.0%	23.0%
BLM Payments	4.0%	2.4%	1.3%	2.1%

Indicators for Economic Performance

See Tables 5.1-3 and 5.1-4 for selected demographic and economic statistics and performance comparisons to the median county in the United States. Data provided by the U.S. Census Bureau and Headwaters Economics's Economic Profile System (EPS).

TABLE 5.1-3

Selected Economic and Demographic Statistics

County/Area	Population*	Employment**	Households***	Area (Sq. Miles)	Population Density/Sq. mile	#of firms	Median Income/Household 2007	Total Personal Income 2006 (\$millions)
Colorado	5,029,196	3,175,268	1,658,238	103,717.53	48.31	464,982	\$55,517	188,222
3-County Aggregate	218,827	123,780	69,924	6,710.47	32.6	20,716		\$5,993
Mesa	146,093	83,742	45,823	3,327.75	43.9	13,027	\$49,926	\$4,122
Montrose	41,412	24,244	13,043	2,240.61	18.48	4,457	\$45,254	\$1,109
Delta	31,322	15,794	11,058	1,142.11	27.4	3,232	\$39,082	\$762

*2010 US Census estimate

**Full-time and part-time employment by place of work (2006)

***2000 census

**TABLE 5.1-4
AGE & GENDER (1990-2000)**

	Delta County, CO	Mesa County, CO	Montrose County, CO	U.S.
Total Population	27,834	116,255	33,432	281,421,906
Total Female	13,862	59,316	16,974	143,368,343
Total Male	13,972	56,939	16,458	138,053,563
Median Age* (2000)	42.3	38.1	38.8	35.3
Median Age* (1990)	40.7	34.7	37.0	32.9
Median Age % Change	3.9%	9.8%	4.9%	7.3%



TABLE 5.1-5 REGIONAL VS. NATIONAL DEMOGRAPHICS

How do demographic, income, and social characteristics in the region compare to the U.S.?

Indicators		Dominguez-Escalante NCA region	U.S.	Domingues-E	U.S.
Demographics	Population Growth (% change, 1990-2008)	53.0%	21.9%		
	Median Age (2000)	na	35.3		
	Percent Population White Alone (2000)	91.9%	75.1%		
	Percent Population Hispanic or Latino (2000)	11.1%	12.5%		
	Percent Population American Indian or Alaska Native (2000)	0.9%	0.9%		
Income	Median Family Income (2000)	na	\$50,046		
	Per Capita Income (2000)	na	\$21,587		
	Percent Individuals Below Poverty (2000)	11.0%	12.4%		
	Percent Families Below Poverty (2000)	7.6%	9.2%		
Structure	Percent Population 25 Years or Older without High School Degree (2000)	16.6%	19.6%		
	Percent Population 25 Years or Older with Bachelor's Degree or Higher (2000)	20.6%	24.4%		
	Percent Population That Speak English Less Than 'Very Well' (2000)	3.5%	8.1%		
	Owner-Occupied Homes where Greater than 30% of Household Income Spent on Mortgage (2000)	29.7%	26.7%		
	Renter-Occupied Homes where Greater than 30% of Household Income Spent on Gross Rent (2000)	39.9%	36.8%		

Data Sources: U.S. Department of Commerce. 2000. Census Bureau, American Community Survey Office, Washington, D.C.. U.S. Department of Commerce. 2010. Bureau of Economic Analysis, Regional Economic Information System, Washington, D.C.

Data provided by the Economic Profile System (EPS 2011) indicates:

The median family can afford the median house, but the region exceeds the national norm by spending more than recommended 30 percent of household income on mortgages or rent. The majority of recent job growth has been in wage and salary employment (people who work for someone else). Job growth in the tri-county area declined from a natural gas-driven boom, but the boom, and jobs, is recovering.

Economics

During the last century, ranching, irrigated farming, mining, natural gas development, the railroad and highway construction (I-70 and U.S. 50) have all been important factors in the social and economic history of the area. Once known as a boom-and-bust energy economy and traditional ranching area, the region’s economy is shifting in a number of ways. First, with the increase in second home owners, recreationists, and retirees to the region, traditional agriculture has decreased as farmland has been converted to residential developments. The fruit industry remains strong and has benefited from the addition of grape vineyards needed to support a growing wine industry. Ranching culture has shifted into fewer families making a living solely from ranching and BLM grazing permits. More traditional ranching families have supplemented their income with outfitting and guiding or energy-related jobs.

The tri-county region has sought to diversify its economy as a result of its negative experiences with a single-industry economy in the mid-1980s. In 1982, the region’s economy was jolted when Exxon closed its oil shale energy project on Colorado’s Western slope (Williamson 1999). Because the region’s economy was highly dependent on this industry, the impact of a single decision by one company was deeply felt into the 1990s.

Percent of Total Employment, 2008

Government – local, state and federal – is a part of the employment picture in the tri-county region. Local government, which includes school district teachers, is the largest government employer.

TABLE 5.1-6 GOVERNMENT JOBS IN TRI-COUNTY REGION

	Delta County, CO	Mesa County, CO	Montrose County, CO	Dominguez- Escalante NCA region
Government	28.2%	15.3%	21.7%	17.8%
Federal Government	2.2%	2.3%	2.2%	2.3%
State Government	2.0%	2.9%	1.5%	2.6%
Local Government	24.0%	10.1%	18.0%	12.9%
Total Private	71.8%	84.7%	78.3%	82.2%

Source: Headwaters Economics and U.S. Department of Labor, 2010

The three-county region is an interesting mix of urban (Grand Junction) and rural influences, and has been working hard to bring more diversity to the economy. Here, from the Colorado Demography Office, is a compilation of regional industrial sectors, from 2009.

TABLE 5.I-7 REGIONAL INDUSTRIAL SECTORS

Industry Group	Delta County	Mesa County	Montrose County	D-E NCA region
Est. Total Jobs	12,684	76,337	19,807	108,828
Agriculture	1,159	1,510	955	3,624
Mining & Utilities	613	3,695	391	4,699
Manufacturing	540	2,858	1,272	4,670
Gov., US/CO	443	3,854	634	4,931
Construction	979	6,738	2,179	9,896
Wholesale Trade	259	2,661	514	3,434
Transprt @ Warehouse	192	3,025	625	3,842
Information	171	1,013	209	1,393
Fin. & Insurance	326	2,570	494	3,390
Real Estate & Rental	376	2,594	744	3,714
Prof., Sci & Tech Services	512	3,844	948	5,304
Mgmt & Admin/Support	418	4,050	772	5,240
Retail Trade	1,585	9,113	2,552	13,250
Education – Private	55	574	100	729
Health Services & Soc. Asst	1,255	9,654	1,967	12,876
Recreation, Enter. & Arts	135	1,438	269	1,842
Accommodations, Food Srv	725	6,360	1,244	8,329
Other services, exc. Pub Ad	849	4,664	1,344	6,857
Local Government	2,095	6,073	2,595	10,763

Retail, health services, local government, construction and hotel/restaurant, in descending order, are the top five job sectors in the three-county region.

Specialization vs. Diversity

The tri-county region is less specialized and more diversified economically, than in decades past, as these specialization scores testify below, and considering the diversity in business sectors seen above.

A county that is economically structured identically to the US would have a score of 0, or very diverse. The most specialized score for a US county is 3,441. Mesa County is closest to the US diversity average. Delta and Montrose are a bit more specialized – the two counties have an over-reliance on construction, agriculture, forestry, fishing and hunting, while Delta is over-reliant on mining.

Economists believe that the greater the economic diversity, the less risk that county faces from downturns in specific economic sectors.

TABLE 5.1-8 ECONOMIC DIVERSITY FOR D-E NCA REGION

Specialization Score	Divergence from US norm
<p>Delta County is roughly average with a score of 151</p>	<p>Under-reliance on manufacturing (7.6% compared to 14.1% in the US) Over-reliance on agriculture, forestry, fishing and hunting (7.4% compared to 1.5% in the US) Over-reliance on mining (6.1% compared to 0.4% in the US) Over-reliance on construction (10.7% compared to 6.8% in the US)</p>
<p>Mesa County is average with a score of 82</p>	<p>Under-reliance on manufacturing (7.2% compared to 14.1% in the US) Over-reliance on construction (10.4% compared to 6.8% in the US) Over-reliance on health care and social assistance (13.5% compared to 11.2% in the US) Over-reliance on accommodation and food services (8.4% compared to 6.1% in the US)</p>
<p>Montrose Co. is roughly average with a score of 153</p>	<p>Over-reliance on construction (15.0% compared to 6.8% in the US) Under-reliance on manufacturing (8.4% compared to 14.1% in the US) Over-reliance on agriculture, forestry, fishing and hunting (5.4% compared to 1.5% in the US) Under-reliance on finance and insurance (2.3% compared to 5.0% in the US)</p>

Analysis by Headwaters Economics (Source: Census 2000 SF3)

Traditional Sectors

A closer look at the traditional sectors of agriculture, mining and energy development is warranted, because these sectors can strongly influence what happens in and around the Dominguez-Escalante NCA.

Agriculture

For a more focused look at the tri-county region surrounding D-E NCA, the following is a snapshot of agriculture, as well as the livestock inventory in 2007, compiled by the Colorado Agricultural Statistics.

TABLE 5.1-9 2009 COUNTY AGRICULTURE PROFILES

Snapshot	Delta Co.	Mesa Co.	Montrose Co.
Number of Farms	1,294	1,767	1,045
Land in Farms	252,530 acres	372,511 acres	321,056 acres
Average Size of Farm	195 acres	211 acres	307 acres

Source: USDA 2007 Census of Agriculture and 2009 Colorado Agricultural Statistics

TABLE 5.1-10 AGRICULTURAL PROFIT & LOSS, 2008 (2010 \$)

	Delta County, CO	Mesa County, CO	Montrose County, CO	Dominguez-Escalante NCA region
Total Cash Receipts & Other Income (\$1000)	76,092	88,667	86,972	251,731
Cash Receipts from Marketings	61,373	76,846	81,325	219,545
Livestock & Products	32,594	38,102	51,750	122,445
Crops	28,779	38,744	29,575	97,099
Other Income	14,719	11,820	5,647	32,186
Government Payments	923	571	880	2,374
Imputed Rent & Misc. Income	13,796	11,249	4,767	29,812
Total Production Expenses	68,856	100,435	89,049	258,339
Realized Net Income (Receipts - Expenses)	7,236	-11,769	-2,076	-6,608
Value of Inventory Change	-2,292	-3,293	-3,458	-9,042
Total Net Income Including Corporate Farms	4,944	-15,061	-5,534	-15,651
Ratio: Total Cash Receipts & Other Income/Total Production Expenses	1.11	0.88	0.98	0.97

Source: *Headwaters Economics*

With the exception of Delta County, the rest of the tri-county region tends to spend more on farming than it takes in as income. This situation is fairly common for the region’s numerous small, or hobby farm operations, which are heavily subsidized by jobs in town.

Farm Employment 2008

With mechanization, and as farms and ranches get larger, there are fewer people needed to run these agricultural operations. Increasingly, farm/ranch employment consists of the proprietors themselves.

TABLE 5.1-11 FARM EMPLOYMENT, 2008

	Delta County, CO	Mesa County, CO	Montrose County, CO	Dominguez- Escalante NCA region
Total Employment	16,305	91,728	24,409	132,442
Farm Employment	1,423	2,092	1,217	4,732
Farm Proprietors Employment	1,174	1,609	967	3,750
Non-Farm Employment	14,882	89,636	23,192	127,710
Percent of Total				
Farm Employment	8.7%	2.3%	5.0%	3.6%
Farm Proprietors Employment	7.2%	1.8%	4.0%	2.8%
Non-Farm Employment	91.3%	97.7%	95.0%	96.4%

Livestock Grazing and Production

Ranching is an important part of the history, culture, and economy of D-E NCA and the tri-county region. Grazing is allowed on BLM lands under the Taylor Grazing Act and FLPMA for the purpose of fostering economic development for private ranchers and ranching communities by providing ranchers access to additional forage (GAO, Sept. 2005). The Omnibus Act that created D-E NCA specifically allows grazing, although livestock grazing is not listed among the 14 “purposes” of D-E NCA.

The major contribution of BLM to the region’s livestock industry is largely through providing grazing lands. Livestock grazing on BLM lands is authorized every ten years, but may be more frequent as ownership changes. The established preference limit for grazing on public lands within D-E NCA is 16,515 Animal Unit Months (AUMs) under 17 permits. Due to range conditions and other considerations, there have been some AUM grazing reductions, leading to an active presence of 14,403 AUMs.

The preference is the maximum number of AUMs that ordinarily could be offered under ideal forage conditions. The active number varies from year to year, due to factors such as drought, wildland fire, transfer of grazing permits, financial limitations on operators, and implementation of grazing management to improve range conditions.

TABLE 5.1-12 GRAZING PERMITS & AUMs, 2010

Area	# of grazing permits	Active AUMs
D-E NCA	17	14,403
GJFO	132	69,308
UFO	132	48,323
Colorado	1,083	541,465

Source: Colorado Agricultural Statistics and BLM

TABLE 5.1-13 2007 TOP LIVESTOCK INVENTORY (PUBLIC AND PRIVATE LANDS)

Type	Delta Co.	Mesa Co.	Montrose Co
Cattle & calves	33,689	34,102	47,338
Sheep & lambs	10,293	3,966	19,792
Horses & ponies	4,292	5,375	3,040
Goats		1,208	
Pheasants	9,642		
Hogs & Pigs	558	316	675
Milk Cows	1,600		

Source: USDA 2007 Census of Agriculture

Cattle are the most prevalent class of livestock. Livestock operations are primarily cow/calf operations. Most calves are born in late winter through spring on private lands. Cattle are turned out to graze as cow/calf pairs. Calves have historically been weaned in the fall and most leave the region to be grown out and/or fed in other parts of the country.

Although BLM forage comprises a relatively small share of the total AUMs in the tri-county area, this forage may be particularly valuable to livestock producers because the grazing fees are favorable and BLM forage is often available during a critical period of the year when forage on private hay fields and meadows is being grown to provide forage for the winter.

The Federal grazing fee for 2011 will be \$1.35 per animal unit month (AUM) for public lands administered by the Bureau of Land Management and \$1.35 per head month (HM) for lands managed by the Forest Service. The 2011 fee is the same as last year's. Grazing fees on private lands range from \$10 to \$20 per AUM, depending on forage productivity.

An AUM or HM – treated as equivalent measures for fee purposes – is the occupancy and use of public lands by one cow and her calf, one horse, or five sheep or goats for a month. The newly calculated grazing fee, determined by a congressional formula and effective on March 1, applies to nearly 18,000 grazing permits and leases administered by the BLM and more than 8,000 permits administered by the Forest Service, nationally.

Unique Agricultural Products

Delta County is first in the state in the production of pheasants and apples. Mesa County is first in the state in the production of peaches. Montrose County is second in the state in the production of poultry and eggs and pullets for laying flock replacement.

Mining, Oil & Gas

(Regarding D-E NCA, there will be no new entries into the NCA. And because there are no longer any active permits within D-E NCA, there will be no mining or oil and gas activity. Mining may have indirect impacts on D-E NCA, via impacts on air quality. Assuming that the mining workforce grows in the future, that could mean greater recreational pressure on D-E NCA.)

Mining sector activities include uranium/vanadium mining, oil production, natural gas production, coal mining and gravel/sand mining. Currently, jobs in oil and natural gas development and production and coal mining account for most of the direct employment reported in the mining sector today. However, uranium mines appear to be poised for dramatic growth.

The table below describes the number of jobs (full and part-time) and the share of total jobs in the mining industry, broken out into four major sub-sectors: oil and gas extraction, coal mining, metal ore mining, and nonmetallic minerals mining.

Mesa County has the majority of oil & gas jobs, while Delta County has the majority of coal jobs. If uranium mining takes off, Montrose would have the majority of those jobs.

TABLE 5.1-14 EMPLOYMENT IN MINING, 2008

	Delta County, CO	Mesa County, CO	Montrose County, CO	Dominguez- Escalante NCA region
Total Private Employment	6,727	55,463	12,390	74,580
Mining	437	1,215	104	1,756
Oil & Gas Extraction	8	1,157	25	1,190
Oil & Gas Extraction	3	88	3	94
Drilling Oil & Gas Wells	0	65	2	67
Support for Oil & Gas Operations	5	1,004	20	1,029
Coal Mining	422	46	33	501
Coal Mining	352	33	33	418
Support Activities for Coal Mining	70	13	0	83
Metal Ore Mining	0	23	34	57
Metal Ore Mining	0	15	32	47
Support Activities for Metal Mining	0	8	2	10
Nonmetallic Minerals Mining	15	0	19	34
Nonmetallic Minerals Mining	15	0	17	32
Support for Nonmetal Minerals	0	0	2	2
Mining Related	3	159	15	177
Oil & Gas Pipeline & Related Const.	0	116	2	118
Pipeline Transportation	3	43	13	59
Non-Mining	6,287	54,089	12,271	72,647

The oil and gas sectors are strongest in Mesa County. With many headquarters and shops in Grand Junction, crews can quickly commute to gas development fields in western Colorado, reaching up into the big natural gas play in Garfield County. Comparatively, Delta and Montrose counties have a much smaller share of jobs due to natural gas development.

TABLE 5.1-14 ANNUAL PERMITS

Co./Yr.	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011*
Mesa	13	27	30	27	54	136	265	293	501	427	306	44
Garfield	213	353	362	567	795	1,509	1,845	2,550	2,888	1,981	2,037	169

Source: Colorado Oil & Gas Conservation Commission

*Current as of 2/11/11

Coal is strongest in Delta County, due to the Bowie and Elk Creek mines. Montrose County has a number of Department of Energy uranium leases in the west end of Montrose and San Miguel counties. These leases could become active when, or if, the market gives the green light.

One new approval is the newly approved Piñon Ridge Uranium/Vanadium processing plant in Western Montrose County, twelve miles West of Naturita. The Piñon Ridge Mill will directly employ 85 people at pay levels between \$40K and \$75K annually. In addition, 250 to 300 jobs will be created in the mining and trucking industry. Mines within 150 miles of the mill are likely to employ miners with annual pay of as much as \$90K. The related jobs to be created in Western Colorado are estimated in excess of 800.

The annual total economic impact from new mining, trucking, milling and related jobs and activity is expected to be in excess of \$100,000,000.

Numerous companies are exploratory drilling for uranium-vanadium in the Uravan Mineral Belt in western Montrose County, while a few operations have undertaken underground bulk sampling excavations. Currently there are twenty-nine active plans of operations or mining notices within the region.

The northern and central portions of the Paradox Basin also appear to have potential for potash development. There’s also potential for sodium, potassium and gypsum mining in the basin.

Average Annual Wages, 2009 (2010 \$s)

Although mining jobs constitute a small percentage of the three-county workforce (4.5 percent), these oil and gas, mining and support wages are among the highest in the region.

TABLE 5.1-15 AVERAGE ANNUAL WAGES IN D-E NCA REGION

	Delta County, CO	Mesa County, CO	Montrose County, CO	Dominguez- Escalante NCA region
All Sectors	\$30,692	\$39,063	\$33,769	\$37,287
Private	\$28,245	\$37,642	\$31,607	\$35,807
Mining	\$58,718	\$69,762	\$70,693	\$68,271
Oil & Gas Extraction	na	\$111,387	na	\$111,047
Mining (Except Oil & Gas)	na	\$50,794	na	\$50,578
Support Activities for Mining	\$38,238	\$68,594	\$62,869	\$66,323
Non-Mining	\$26,219	\$35,572	\$30,874	\$34,162
Government	\$36,908	\$46,926	\$41,563	\$44,147

Source: Headwaters Economics, Economic Profile System

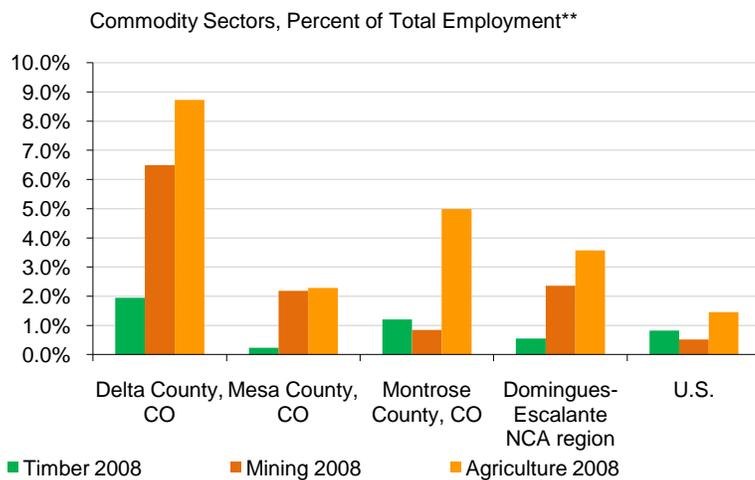
Most of the oil and gas service companies associated with oil and gas operations in the D-E NCA region are located within the tri-county area, particularly Mesa County. The amounts of federal minerals and the dependency of local economies vary among the counties.

Counties and school districts receive revenues from oil and natural gas leasing and production taxes and ad valorem property taxes on certain field and pipeline facilities. Detailed breakdowns of taxable values associated with the oil and natural gas industry for analysis of property tax as assessments are not

available. However, revenues associated with mineral exploration, development, and production of federal minerals allow higher levels of government and/or school district services than would be available without these revenues. In other cases, these revenues reduce the tax burden on residential, commercial and industrial property taxpayers within the county. These benefits can be offset by higher service demands associated with mineral exploration, development and production. Road maintenance appears to be the major function that requires a higher level of service.

Overall, the traditional, natural-resource based industries have a stronger presence in rural communities.

CHART 5.1-I COMMODITY SECTORS, D-E NCA REGION



Recreation and Tourism

More recently, outdoor recreation and tourism have emerged as major contributors to the local economies. In the three county region, 15.8 percent of the workforce are in travel and tourism related jobs. At the county level, it is 13.0 percent, 16.6 percent and 13.5 percent, respectively (see third row below). The region offers a wide array of recreational opportunities – hunting, fishing, camping, rafting, off-highway vehicle riding, hiking and wildlife viewing. Ski communities of Aspen, Vail, Telluride and Crested Butte are to the east and southeast of the three counties, while the mountain biking centers of Fruita, Colorado and Moab, Utah, are right at hand, or just down the road.

TABLE 5.1-16 EMPLOYMENT IN RECREATION/TOURISM SECTOR

	Delta County, CO	Mesa County, CO	Montrose County, CO	Dominguez-Escalante NCA region
Total Private Employment	6,727	55,463	12,390	74,580
Travel & Tourism Related	872	9,234	1,667	11,773

T&T Related Percentage of Total	13.0 percent	16.6 percent	13.5 percent	15.8 percent
Retail Trade	183	1,593	233	2,009
Gasoline Stations	112	477	96	685
Clothing & Accessory Stores	25	633	76	734
Misc. Store Retailers	46	483	61	590
Passenger Transportation	0	156	46	202
Air Transportation	0	155	46	201
Scenic & Sightseeing Transport	0	1	0	1
Arts, Entertainment, & Recreation	32	881	141	1,054
Performing Arts & Spectator Sports	20	176	2	198
Museums, Parks, & Historic Sites	2	34	2	38
Amusement, Gambling, & Rec.	10	671	137	818
Accommodation & Food	657	6,604	1,247	8,508
Accommodation	76	990	224	1,290
Food Services & Drinking Places	581	5,614	1,023	7,218
Non-Travel & Tourism	5,855	46,229	10,723	62,807

The region’s wealth of outdoor amenities are well within commuting distance, but not so close that they drive up the cost of regional housing.

The economic influence of recreation use on BLM lands is related to local expenditures for goods and services, such as gasoline, lodging, meals, and supplies. To understand the local economic influence of recreation use, it is important to understand that local expenditures vary depending on the type of activity, whether the recreation use is from local or non-local residents, and whether the activity involves overnight stays. Local expenditures related to recreation use support local employment and labor income (standard economic indicators). Generally, employment related to recreation and tourism tends to be seasonal and relatively low paid, with a high portion of the labor force self-employed. The recreation opportunities available in the planning area play an important role in the quality of life of local residents, and also attract visitors from elsewhere in the state and region.

However, some recreation workers become entrepreneurs, opening bike shops, specialty shops or offer their services as outfitters. These businesses also add to the atmosphere that attracts other businesses.

Role of Outdoor Amenities in Economic Development

According to the “Three Wests” research by Headwaters Economics, D-E NCA’s tri-county region falls into two of three categories: *metropolitan* and *connected*, but not *isolated*.

Metropolitan counties are those within a metropolitan statistical area, and neighboring counties within easy commuting distance to the city. That definition fits Mesa County and the metropolitan area of Grand Junction, which is serviced by daily flights at the Grand Junction Airport, as well as major highways such as Interstate 70 and U.S. 50.

Connected counties (such as Delta and Montrose) are in a rural setting, but are connected to the rest of the world via airports with daily commercial service.

Isolated counties are in a rural setting, where it is difficult to get to major population centers via road or air travel. Hinsdale and Mineral counties are Colorado examples.

“Three Wests” research shows evidence of at least two distinct Wests (“metro” and “isolated”), and one category that is on a continuum between the two (“connected”), that can be classified using measures of industry occupation, growth and education.

“The percent of employment in services and professional sectors, as well as manufacturing, was the highest in metro counties and lowest in isolated counties. This means the ability of a community to create or retain jobs in manufacturing or service and professional industries is limited by distance and access to markets. These sectors are therefore least likely to be found in isolated counties, more likely to be in counties that are connected via airports, and most likely to exist in metropolitan counties. Conversely, employment in energy-related industries and agriculture – those that rely primarily on natural versus human resources - were highest in isolated counties.”

Source: The Economic Importance of Air Travel in High-Amenity Rural Areas. *Journal of Rural Studies* 25(2009): 343-353

Outdoor, recreational amenities are not enough to attract Baby Boomer retirees. But, if daily flights (Montrose and Grand Junction) and plenty of health care facilities are also part of the mix, boomers become very interested in such amenity-rich communities.

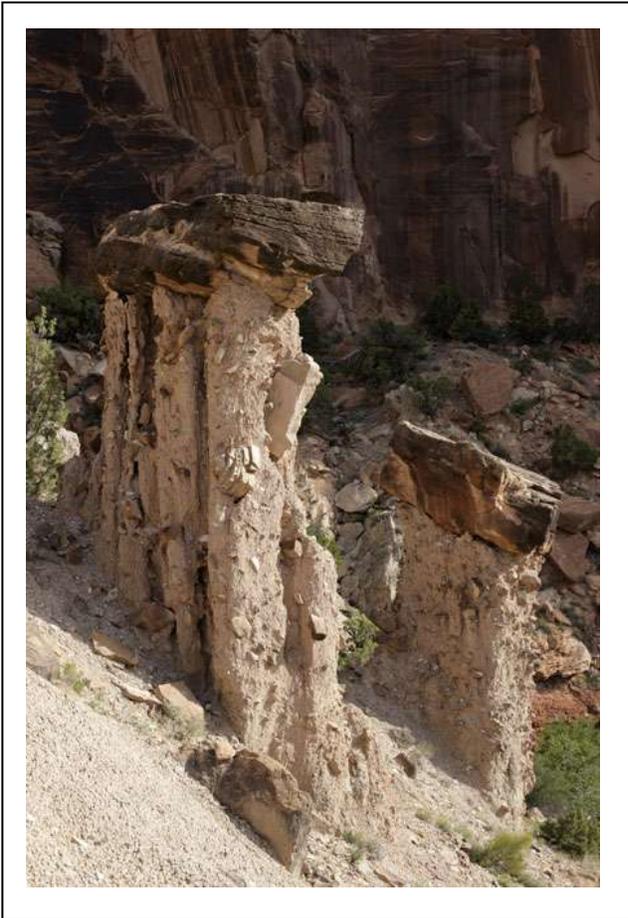
Boomer retirees have been moving into the region. Non-labor income, as charted by Headwaters Economics (2008) is already a significant economic force in the region. Non-labor income -- Social Security, disability, medical and pension transfer payments, but also dividends, interest and rent-- are all above U.S. levels, by percentage.

TABLE 5.1-17 INCOME BY CATEGORY IN D-E NCA REGION

	Delta County, CO	Mesa County, CO	Montrose County, CO	Dominguez- Escalante NCA region	U.S.
Total Personal Income (\$1000)	933,994	5,269,422	1,243,094	7,446,510	12,381,954,283
Non-Labor Income	412,642	1,840,500	492,904	2,746,045	4,131,537,040
Dividends, Interest, & Rent	198,001	1,024,620	263,782	1,486,404	2,231,960,269
Transfer Payments	214,641	815,879	229,121	1,259,641	1,899,576,771
Labor Earnings	521,352	3,428,922	750,191	4,700,465	8,250,417,243

Percent of Total

Non-Labor Income	44.2%	34.9%	39.7%	36.9%	33.4%
Dividends, Interest, & Rent	21.2%	19.4%	21.2%	20.0%	18.0%
Transfer Payments	23.0%	15.5%	18.4%	16.9%	15.3%
Labor Earnings	55.8%	65.1%	60.3%	63.1%	66.6%



Chapter 6 - Consistency/Coordination with Other Plans

According to guidance found in 43 CFR 1610, BLM RMPs and amendments must be consistent, to the extent practical, with officially approved or adopted resource-related plans of state and local governments, other federal agencies, and tribal governments, so long as the guidance and RMPs are also consistent. BLM RMPs must also be consistent with the purposes, policies, and programs of FLPMA and other federal laws and regulations applicable to public lands, including federal and state pollution control laws (see 43 CFR 1610.3-2 (a)).

If these other entities do not have officially approved or adopted resource-related plans, then BLM RMPs must, to the extent practical, be consistent with their officially approved and adopted resource-related policies and programs. This consistency will be accomplished so long as BLM RMPs incorporate the policies, programs, and provisions of public land laws and regulations and federal and state pollution control laws (see 43 CFR 1610.3-2 (b)).

Before the BLM approves the proposed RMP decisions, the Governor of Colorado will have sixty days in which to identify inconsistencies between the proposed plan and state plans and programs, and to provide written comments to the BLM State Director. The BLM and the state may mutually agree on a shorter review period satisfactory to both. If the Governor does not respond within this period, it is assumed that the proposed RMP decisions are consistent.

If the Governor recommends changes in the proposed plan that were not raised during the public participation process, the BLM State Director shall provide the public with an opportunity to comment on the recommendations (per 43 CFR 1610.3-2 (e)). This public comment opportunity will be offered for thirty days, and may coincide with the thirty-day comment period for the Notice of Significant Change. If the BLM State Director does not accept the Governor's recommendations, then the Governor has thirty days to appeal in writing to the national BLM Director (per 43 CFR 1610.3-2(e)).

County, town, and state agency, and other federal agency plans for neighboring areas or cross-jurisdictional purposes are further discussed in the following sections. Plans listed or discussed in the following sections should be consulted as applicable during development of the RMP.

Cooperating agencies have been a formal part of the planning process for D-E NCA. City, county, state and federal agencies, as well as regional tribes, have been invited to attend briefings and to comment on the planning alternatives as it unfolds. These agencies share their own data with the BLM and work to see that their interests and concerns are understood by BLM planners and specialists.

6.1 County and City Plans

- Delta County Master Plan (2007)
- Mesa County Rural Master Plan, 2006
- Mesa County Weed Plan
- Mesa County Comprehensive Energy Plan
- Montrose County Master Plan (Draft 2010)
- City of Grand Junction Comprehensive Plan, 2010
- City of Delta Comprehensive Plan, 2008
- City of Montrose Comprehensive Plan, 2008
- Whitewater Community Plan, 2007

6.2 State Agency Plans

DOCUMENT NAME: COLORADO DIVISION OF WILDLIFE STRATEGIC PLAN	
Date:	2010-2020
Purpose:	It is the policy of the state of Colorado that the wildlife and their environment are to be protected, preserved, enhanced, and managed for the use, benefit, and enjoyment of the people of this state and its visitors. It is further declared to be the policy of this state that there shall be provided a comprehensive program designed to offer the greatest possible variety of wildlife-related recreational opportunity to the people of this state and its visitors and that, to carry out such program and policy, there shall be a continuous operation of planning, acquisition, and development of wildlife habitats and facilities for wildlife-related opportunities [C.R.S. 33-1-101 (1)]. CDOW's mission is to perpetuate the wildlife resources of the state and provide people the opportunity to enjoy them. CDOW's Strategic Plan defines values and expectations, consistent with the Division's mission, that form a roadmap for wildlife management in the coming years. In addition, the Strategic Plan provides a foundation for policy analysis and priority setting for current wildlife management issues and for unforeseen issues that will inevitably arise over the five-year period covered by the Strategic Plan.
Common, Dependent,	Specific plan objectives for CDOW Fish, Wildlife, and Habitats Program

DOCUMENT NAME:

COLORADO DIVISION OF WILDLIFE STRATEGIC PLAN

and Interdependent Resources:

include the following:

- Protect, restore and enhance habitat for fish and wildlife.
- Manage proactively to prevent and control fish and wildlife diseases and introductions of invasive species to protect fish and wildlife populations.
- Ensure the long-term viability of native fish and wildlife and strive to maintain the broadest representation of the diversity of native wildlife in suitable habitats across the state.
- Maintain healthy and viable game and sport fish populations sufficient to meet the demand for hunting, fishing and trapping, while minimizing landowner conflicts.

Planning Implications:

The BLM should work with CDOW to evaluate and coordinate oil and gas management actions that may conflict with the priority items listed above.

DOCUMENT NAME:

COLORADO COMPREHENSIVE WILDLIFE CONSERVATION STRATEGY (2005)

Purpose:

Catalogs the current status of many Colorado wildlife species, threats to the habitats upon which they depend, and an articulation of strategies that can be employed to lessen those threats. It is based upon the best available science, the collective judgment of many Colorado scientists, and also reflects the interests and concerns of citizens with a stake in Colorado wildlife conservation.

It reflects the fundamental goal of CDOW and the state as a whole, which is to secure wildlife populations such that they do not require protection via federal or state listing regulations. It also fulfills the requirements of the State Wildlife Grants program (*Title IX, Public Law 106-553 and Title 1, Public Law 107-63*) by addressing the eight elements stipulated in that legislation.

Common, Dependent, and Interdependent Resources:

Landscapes, habitats, and wildlife do not recognize jurisdictional boundaries.

Planning Implications:

Any proposed activities on lands involving wildlife must be coordinated with regional partners.

Rangewide Conservation Strategy for 3 sensitive fishes (3SPP range-wide conservation agreement and strategy published pdf at S:\Biological_Resources\TESpecies\Guidance)

Colorado River Water Conservation District: Colorado Climate Change: A Synthesis to Support Water Resource Management and Adaptation (Oct. 2008)

6.3 Other Federal Agency Plans

Black Canyon of the Gunnison National Monument and Curecanti National Recreation Area (1997)

Grand Mesa, Uncompahgre and Gunnison National Forest Plan (1983)

Grand Mesa, Uncompahgre and Gunnison National Forest Plan revision (temporarily suspended)

Colorado River Basin Salinity Control Program (Colorado River Basin Salinity Control Act, Public Law 93-320, June 1974)

6.4 Cooperating Agencies

AGENCY	ACTIVE
Bureau of Reclamation, Western Colorado Area Office	
City of Grand Junction	X
City of Delta	X
City of Montrose	X
Colorado Department of Natural Resources, Southwest Region	X
Colorado River Water Conservation District	
Mesa County	X
Delta County	X
Montrose County	X
U.S. Fish and Wildlife Service, Western Colorado Ecological Services Field Office	X
U.S. Forest Service, Grand Mesa, Uncompahgre and Gunnison NF	

Chapter 7 - Specific Mandates

The foundation of public land management is in the mandates and authorities provided in laws, regulations, and executive orders. The BLM planning process (as described in 43 CFR 1600) is authorized and mandated through two important laws:

- the Federal Land Policy and Management Act of 1976 and
- the National Environmental Policy Act of 1969.

In addition to these acts, several other acts, Instructional Memorandums, information bulletins, manuals, and handbooks give direction and authority to the BLM. The following are some of the documents that direct the management of public lands and resources in the Uncompahgre Planning Area.

THE SPECIFIC MANDATES CHAPTER CONSISTS OF FIVE SECTIONS:

- LAWS, REGULATIONS, AND ORDERS
- INSTRUCTION MEMORANDUMS, INFORMATION BULLETINS, MANUAL SECTIONS, HANDBOOKS, AND TECHNICAL NOTES
- APPLICABLE COLORADO STATE LAWS AND REGULATIONS
- MEMORANDA AND AGREEMENTS
- APPLICABLE PLANNING DOCUMENTS



7.1 Laws, Regulations, and Orders

- 2009 Guidance for the Implementation of the Federal Wildland Fire Management Policy
- American Indian Religious Freedom Act (49 United States Code (USC) 47125 et sequens)
- Appropriations Act of 1952, McCarran Amendment
- Archaeological Resources Protection Act of 1979, as amended (16 USC 470)
- Classification of Multiple Use Act of September 1964, in accordance with 43 CFR 2400
- Clean Air Act of 1955 (42 USC §§ 7401-7671q.)
- Clean Water Act of 1987, as amended (33 USC 1251)
- Colorado River Basin Salinity Control Act of 1974
- Endangered Species Act of 1973, as amended (16 USC 1531 et sequens)
- Executive Order 11288 (water quality management and pollution abatement plans)
- Executive Order 11644 (Use of Off-Road Vehicles on the Public Lands)
- Executive Order 11738 (Enforce the Clean Air Act and the Clean Water Act in the procurement of Goods, Materials, and Services)
- Executive Order 11987 (Exotic Flora and Fauna)
- Executive Order 13007 (Indian Sacred Sites)
- Executive Order 13084 (Consultation and Coordination with Indian Tribal Governments)
- Federal Cave Resources Protection Act of 1988 (16 USC 4301 et sequens)
- Federal Land Policy Management Act of 1976 (43 USC 1701 et sequens)
- Federal Noxious Weed Act of 1974, as amended (7 USC 2814)
- Federal Water Pollution Control Act (commonly known as the Clean Water Act), as amended (33 USC 1251-1387)
- Federal Wildland Fire Management Policy (1995)
- Fish and Wildlife Coordination Act (16 USC 661 et sequens)
- Healthy Forests Restoration Act of 2003

- Historic Sites Act of 1935 (16 USC 461)
- Migratory Bird Conservation Act of 1929, as amended (16 USC 715)
- Migratory Bird Treaty Act of 1918, as amended (16 USC 703-712)
- Mining and Mineral Policy Act of 1970 (30 USC 181 et sequens)
- National Ambient Air Quality Standards (40 CFR 50.4-50.12)
- National Environmental Policy Act of 1969 (42 USC 4321 et sequens)
- National Historic Preservation Act, as amended (16 USC 470)
- Native American Graves Protection and Repatriation Act, as amended (25 USC 3001 et sequens)
- Noise Control Act of 1972 (42 USC 4901 et sequens)
- Noxious Weed Control Act of 2004 (Public Law 108-412)
- Oil and Gas Onshore Orders
- Onshore Oil and Gas Leasing Reform Act of 1987 (30 USC 181 et sequens)
- Public Rangelands Improvement Act of 1978 (43 USC 869 et sequens)
- Recreation and Public Purposes Act of 1926, as amended (43 USC 869 et sequens)
- Review and Update of the 1995 Federal Wildland Fire Management Policy (2001)
- The R&PP Amendment Act of 1988
- The Sikes Act of 1974, as amended (16 USC 670 et sequens)
- Soil and Water Resources Conservation Act of 1977 (16 USC 2001)
- Surface Mining Control and Reclamation Act of 1977 (30 USC 1201 et sequens)
- Taylor Grazing Act of 1934 (43 USC 315)
- The Common Varieties of Mineral Materials Act of 1947
- The Mineral Leasing Act of 1920
- The Mineral Leasing Act for Acquired Lands of 1947
- The Multiple Use Mining Act of 1955
- The Organic Administration Act of 1897

- The Surface Mining Control and Reclamation Act of 1977
- The United States Mining Laws of 1872
- Title CFR 43 (Public Lands, Interior), Parts 2100, 2200, 2300, 2700, 2800, 2900, 3100, 3200, 3400, 3500, 3600, and 3800
- Water Resources Development Act of 1974
- Wild and Scenic Rivers Act, as amended (16 USC 1271 et sequens)
- Wilderness Act, as amended (16 USC 1131 et sequens)



7.2 Memorandums, Bulletins, Manuals, Handbooks, and Notes

MCA 97-18: Bureau of Land Management & Mesa County, Coordinate planning and decision-making activities

BLM-H-1601-1 (Land Use Planning)

BLM-H-1790-1 (NEPA Handbook)

BLM-H-2100-1 (Acquisitions)

BLM-H-2200 (Land Exchanges)

BLM-H-3720-1 (Abandoned Mine Land Program Policy)

BLM-H-4180-1 (Wilderness Inventory and Study Procedures)

BLM-H-8410-1 (Visual Resource Inventory)

BLM-H-8550-1 (Interim Management Policy and Guidelines for Lands Under Wilderness Review)

BLM H-9211-1, Fire Management Activity Planning

Interagency Prescribed Fire Planning and Implementation Procedures Guide (July 2008)

BLM-M-1613 (Areas of Critical Environmental Concern)

BLM-M-4180 (Rangeland Health Standards)

BLM-M-6840 (Special Status Species Management)

BLM-M-7150 (Provides guidance in the conduct of maintenance of water utilization and development, water quality, water yield and timing, and water rights)

BLM-M-7300 (Air Resource Management Manual)

BLM-M-8100 (Cultural Resource Management)

BLM-M-8270 (Paleontological Resource Management)

BLM-M-8340 (OHV Management)

BLM Manual 9211, Fire Planning

Colorado IB 2003-020 (Travel Management Guidelines)

Colorado IM 2007-020 (Comprehensive Travel Management Planning and OHV Designations)

IB 98-116 (Clean Water Action)

IB 2002-101 (Cultural Resource Information)

IM 78-410 (Protection of Wetlands and Riparian Areas)

IM 78-523 (Compliance with BLM Interim Floodplain Management Procedures)

IM 87-261 (Implementation of the Riparian Area Management Policy)

IM 99-085 (Federal Multi-Agency Source Water Agreement)

IM 99-123 (Reporting to the Colorado River Salinity Control Forum)

IM 2004-005 (Clarification of OHV Designations and Travel Management in the BLM Land Use Planning Process)

IM 2005-008 (Black-tailed, White-tailed, and Gunnison Prairie Dog Conservation Update)

IM 2008-014 (Clarification of Guidance and Integration of Comprehensive Travel and Transportation Management Planning into the Land Use Planning)

Interagency Standards for Fire and Fire Aviation Operations (The Red Book) (Updated year!)

Interagency Prescribed Fire Planning and Implementation Procedures Guide (July 2008)

Technical Notes 346: Erosion condition classification system

Technical Notes 364: 1980-82 salinity status report: results of Bureau of Land Management studies on public lands in the Upper Colorado River Basin

Technical Notes 369: Considerations in rangeland watershed monitoring

Technical Notes 373: Diffuse-source salinity Mancos shale terrain

Technical Notes 405: A framework for analyzing the hydrologic conditions of watersheds



7.3 Applicable Colorado State Laws and Regulations

Colorado Air Quality Control Commission, Regulation Number 9, Open Burning, Prescribed Fire, and Permitting, 5 CCR, 1001-11

Colorado Water Quality Control Act

Colorado Sound Law

Colorado OHV Act

Colorado OHV Regulations

Colorado Snowmobile Act

Colorado Recreation Trails Act

Colorado Revised Statutes - Title 37, Water and Irrigation

Colorado Surface Coal Mining Reclamation Act, 34-33-101 ET SEQ., C.R.S. 1973 As Amended

Primary Drinking Water Regulations - 5 CCR 1003-1 (amended January 2005; effective March 2005)

Regulation 31 - The Basic Standards and Methodologies for Surface Water (amended August 2005; effective December 2005 and December 2007)

Regulation No. 39 - Colorado River Salinity Standards (adopted May 1980; amended 1982 and 1997)

Regulation No. 41- The Basic Standards for Groundwater

Regulation No. 42 - Site Specific Water Quality Classifications and Standards For Groundwater

Regulation No. 93 - Section 303(d) List Water Quality Limited Segments Requiring TMDLs (adopted March 2006)

Regulation No. 94 - Colorado's Monitoring and Evaluation List (adopted March 2006)

7.4 Memoranda and Agreements

- Interagency Memorandum of Understanding (MOU) between the BLM and U.S. Department of Agriculture (60F26045-48) (May 1995)
- Interagency MOU between the BLM and the Bureau of Reclamation to work together in developing a written Implementation Plan for the Selenium Management Program and to participate in the implementation under a future agreement. (NOTE: to be signed May 2010)
- Interagency Agreement between the Bureau of Reclamation and the BLM (March 1983)
- Master MOU with the FWS (December 1986)
- MOU for Coordination and Enhancement of Services to and by the Outfitting Industry in Colorado on National Forest System, BLM and State Public Lands (2007)
- MOU between the Colorado's Outfitters Association and the USDI, Bureau of Land Management, Colorado (2006)
- MOU between Colorado Mountain Club and the USDI Bureau of Land Management, Colorado State Office (2008)
- MOU between the Colorado Off-Highway Vehicle Coalition and the COHVCO Foundation and the USDI Bureau of Land Management, Colorado State Office (2005)
- MOU between International Mountain Bicycling Association and Bicycle Colorado and the USDI Bureau of Land Management, Colorado State Office (2005)
- MOU between USDI Bureau of Land Management, Colorado State Office and Colorado River Outfitters Association and Colorado State Parks (2007)
- MOU between USDI Bureau of Land Management and The Access Fund (2005)
- MOU between USDI Bureau of Land Management, USDA Forest Service and US Fish and Wildlife Service and Federal Lands Hunting, Fishing, and Shooting Sports Roundtable (2006)
- MOU between USDI Bureau of Land Management and The Corps Network (2008)
- Rangeland Programmatic Memorandum of Agreement among the BLM, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers
- State Protocol Agreement between the Colorado State Director of the Bureau of Land Management and the Colorado State Historic Preservation Officer regarding the Manner in which the Bureau of Land Management will meet its Responsibilities under the National Historic Preservation Act and the National Programmatic Agreement (1998)

7.5 Applicable Planning Documents

LAND USE PLANS AND AMENDMENTS

Grand Junction Comprehensive Plan, 2010.

Mesa County Land Use Plan, 2000

Mesa County Land Development Code, 2000

Uncompahgre Basin Resource Management Plan and Record of Decision (July 1989)

Uncompahgre Basin Resource Management Plan Amendment for the Uncompahgre Basin Planning Area (EA No. CO-030-U-92-20) (June 1992)

Uncompahgre Basin Resource Management Plan Amendment Decision Record and Finding of No Significant Impact to amend the existing land disposal decision in the Uncompahgre Basin Resource Management Plan (Environmental Assessment CO-034-94-23) (September 1994)

Uncompahgre Basin Resource Management Plan and San Juan/San Miguel Resource Management Plan Amendment to Adopt Standards for Public Land Health and Guidelines for Livestock Grazing Management (March 1997)

ACTIVITY LEVEL PLANS

Approved Resource Management Plan Amendments/Record of Decision for Designation of Energy Corridors on Bureau of Land Management-Administered Lands in the 11 Western States (January 2009)

Final Vegetation Treatments using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement (June 2007)

Wind Energy Development Programmatic Environmental Impact Statement and Associated Land Use Plan Amendments (December 2005)

Resource Management Plan Amendments for Geothermal Leasing in the Western United States (December 2008)

Solar Energy Development Programmatic Environmental Impact Statement to develop and implement agency-specific programs that would facilitate environmentally responsible utility-scale solar energy development in six western states (Scheduled for release in Fall 2010)

Uncompahgre Field Office Fire Management Plan (2004) (2008 pending)

ENDANGERED SPECIES RECOVERY PLANS

Black-Footed Ferret Recovery Plan (1978)

Bonytail Chub Recovery Plan FWS (September 1990)

Colorado Squawfish Recovery Plan (1991)

Determination of Critical Habitat for the Colorado River Endangered Fishes: Razorback Sucker, Colorado Pikeminnow, Humpback Chub, and Bonytail Chub FWS (March 1994)

Determination that the Bonytail Chub (*Gila elegans*) is an Endangered Species FWS (April 1980)

Endangered and Threatened Wildlife and Plants; the Razorback Sucker Determined To Be an Endangered Species FWS (October 1991)

Endangered Species List - 1967 FWS (Colorado Pikeminnow, Humpback chub) (March 1967)
Final Recovery Plan, Southwestern Willow Flycatcher (2002)
Gray Wolf Recovery Plan (1987)
Humpback Chub Recovery Plan FWS (September 1990)
Incorporate the Canada Lynx Conservation Assessment and Strategy into Colorado Resource Management Plans (March 2002)
Mexican Spotted Owl Recovery Plan (1995)
Razorback Sucker Recovery Plan FWS (1998)
Recovery Goals: Amendment and Supplement to the Bonytail Chub Recovery Plan FWS (August 2002)
Recovery Goals: Amendment and Supplement to the Colorado Squawfish (pikeminnow) Recovery Plan FWS (August 2002)
Recovery Goals: Amendment and Supplement to the Humpback Chub Recovery Plan FWS (August 2002)
Recovery Goals: Amendment and Supplement to the Razorback Sucker Recovery Plan FWS (August 2002)

HABITAT PLANS

BLM National Sage-Grouse Habitat Conservation Strategy (November 2004)

RECREATION MANAGEMENT PLANS

San Miguel Watershed Plan (1998)

OTHER POLICY AND GUIDING DIRECTION

Designation Order; San Miguel County, CO; Establishments of 7 Day Camping Limit on Public Lands Within San Miguel and Montrose Counties (March 1995)
Colorado Policy on Cultural Clearances for Travel Planning (Addendum 1 to the Colorado Protocol: Section 106 Requirements for Comprehensive Travel and Transportation Management Planning)
Recreation Management Guidelines to Meet Public Land Health Standards on Bureau of Land Management Lands in Colorado (2000)
National OHV Strategy
National Mountain Bike Strategy
Federal Wildland Fire Management Policy and Program Review - Final Report (December 1995)
Review and Update of the 1995 Federal Wildland Fire Management Policy (January 2001)
Interagency Strategy for the Implementation of Federal Wildland Fire Management Policy (2003)
Interagency Wildland Fire Use Implementation Procedures Reference Guide (May 2007)
Interagency Prescribed Fire Planning and Implementation Procedures Guide (July 2008)

Chapter 8 - Scoping Report Summary

On March 30, 2009, the Dominguez-Escalante National Conservation Area (D-E NCA) and the Dominguez Canyon Wilderness (Wilderness), was created by Omnibus Public Land Management Act of 2009 (Public Law 111-11, “the Act” or “Omnibus Act” hereafter).

The D-E NCA and wilderness planning area is located in Mesa, Delta, and Montrose Counties, Colorado and encompasses approximately 209,610 acres of public land.

The United States Department of the Interior, Bureau of Land Management (BLM) is preparing a Resource Management Plan (RMP) for the Dominguez-Escalante National Conservation Area and Dominguez Canyon Wilderness, in western Colorado. This RMP is a joint effort of the Grand Junction and Uncompahgre Field Offices. The environmental effects of the RMP will be evaluated in an environmental impact statement (EIS), which will accompany the draft and final RMP documents.

The RMP will replace portions of the existing 1987 Grand Junction Resource Area RMP and the 1989 Uncompahgre Basin RMP. This new planning process will allow the BLM to focus specifically on developing management to conserve, protect and enhance the resources and values of the NCA and the wilderness area as set forth in Section 2402(b) of the Omnibus Act.

Public involvement is a key element of an effective RMP/EIS process. Even further, the Omnibus Act creating D-E NCA mandates public scoping and outreach during the planning process; and formation of an Advisory Council.

Mesa State College’s Natural Resources and Land Policy Institute has been an essential partner in this endeavor. The Institute conducted surveys of recreationists in the NCA and held focus group meetings regarding recreation and wilderness management.

This report documents the results of the public and agency scoping and outreach process. The purpose of the scoping process is to determine relevant issues that will influence the scope of the environmental analysis, including alternatives, and guide the planning process.

Public Scoping Activities

The formal public scoping process for the D-E NCA RMP/EIS began on August 3, 2010 with the publication of a notice of intent in the *Federal Register*, and ended on October 1, 2010. Public outreach during this scoping period included two open houses, a news release and an information flier posted in Grand Junction and Delta outdoor recreation-oriented shops and centers, as well as information kiosks in the D-E NCA itself. Notices of the scoping meetings were emailed to individuals who had expressed interest. Information was also publicly available on the BLM’s D-E NCA website (<http://www.blm.gov/co/st/en/nca/denca.html>).

Public Scoping Results

The BLM received 66 unique emails, letters and comment during the public scoping period. Over 2,000 identical form letters were received, which were treated as one letter.

Individual comments were identified within each submission, and initially categorized according to their relevance to the D-E NCA RMP. Comments that addressed a ‘planning issue’ were then further

categorized, coded, entered into a database, and analyzed. Additional comments of relevance to the D-E NCA RMP that were received during the Grand Junction Field Office and Uncompahgre Field Office scoping processes were added, categorized, coded, entered into a database, and analyzed as well.

In total, 264 'planning issue' comments were identified and further analyzed. Of the 264 comments, 95 came from unaffiliated individuals, 14 came from public agencies, 13 came from businesses, nine from letter comments and the balance (133) came from non-profit or citizen's groups. No written submissions were received from tribal governments or elected officials. Non-substantive comments were not included.

Topics Summary

Based on public scoping, the following topics were of most interest to scoping participants and are presented in descending order of the number of comments received:

- Travel Management
- Recreation
- Wild and Scenic Rivers
- Wilderness
- General Planning
- Cultural Resources
- Fish and Wildlife
- Law Enforcement
- Vegetation Management
- Air, Climate and Noise
- Special Designation Areas
- Water and Soil
- Livestock Grazing
- Paleontology and Geology
- Energy Development
- Visual Resource Management
- Socio-Economics

The BLM further analyzed individual comments to identify any new planning issues to help guide the development of a reasonable range of alternative management strategies for the RMP, in addition to planning issues.

Future Steps

Scoping is the first opportunity for public involvement in the RMP process. The BLM is using information collected during the scoping period to formulate alternatives and prepare the Draft RMP/EIS, which is anticipated to be published in the summer of 2012.

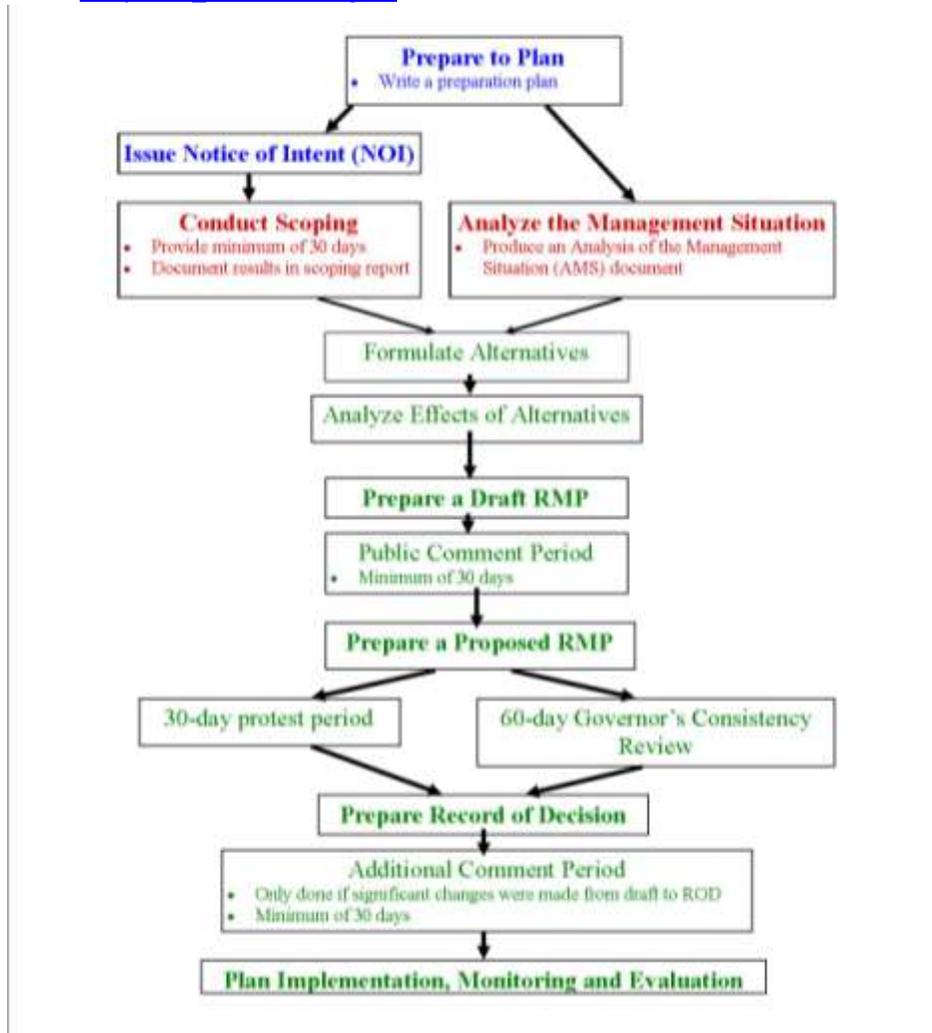
Release of the Draft RMP/EIS will be announced in a Notice of Availability in the Federal Register and in the local media. There will be additional public meetings to solicit public comment on the draft document. At the conclusion of the public comment period, the Draft RMP/EIS will be revised, and a Proposed RMP/EIS will be published and made available for public review. (See Planning Flowchart below.)

While these are the specific opportunities for public involvement during RMP process, the BLM welcomes input from the public on the RMP process at any time. You can follow the RMP/EIS process and get news updates from our Web site at http://www.blm.gov/co/st/en/nca/denca/denca_rmp.html

You can also sign up to receive a newsletter (electronically or hard copy) by emailing the D-E NCA staff at dencarp@blm.gov or faxing us 970-244-3083 or writing us at 2815 H Road, Grand Junction, Colorado 82506.

For more information and/or to have your name added to our mailing list, contact Ben Blom, D-E NCA planning team lead, telephone (970) 244-3188; or by e-mail:

Benjamin.Blom@blm.gov.



Other Opportunities for Public Involvement

Since the Scoping Report was finalized, additional public comments have been submitted to the D-E NCA Advisory Council, as part of their public meetings. In addition, comments about travel management, in the higher elevations of the NCA, will be accepted through June 15, so citizens can reach roads and trails that might have been inaccessible during winter and part of the spring.

Chapter 9 - List of Preparers

NAME	DISCIPLINE	RESPONSIBILITY
<i>D-E NCA Core Team</i>		
Katie A. Stevens	D-E NCA Manager (Acting)	Oversight & Management
Ben Blom	Planning & Environmental Coordinator	Forestry, Land Health Assessment
Andy Windsor	Outdoor Recreation Planner	Recreation, Travel, Wild & Scenic Rivers & Wilderness
Brodie Farquhar	Writer/Editor	Report Editing & Formatting, Climate, Socio-Economics
Alissa Leavitt-Reynolds	Archeologist	Cultural, Archeological, Historical
Jim Dollarschell	Range Conservationist	Livestock Grazing
<i>Interdisciplinary Support Team</i>		
Scott Gerwe	Geologist	Geology, Paleontology
Lathan Johnson	Fire Management Specialist	Wildland Fire & Fuels
Matt McGrath	Outdoor Recreation Planner	Wilderness
Anna Lincoln	Ecologist	Special Status Species, Vegetation
Nate Dieterich	Hydrologist	Soils & Water
Heidi Plank	Wildlife Biologist	Wildlife Biology
Nikki Grant-Hoffman	Ecologist	Scientific, Educational
Sparky Taber	Range Conservationist	Weeds
Doug Diekman	Geographical Information Systems Lead	Mapping & Spatial Analysis
Jacob Martin	Range Conservationist	Forestry
Lee Rickard	Fire Management Specialist	Wildland Fire
Christine Stark	Natural Resources Specialist	Land Use Authorization, Riparian Areas
Linda Reed	Realty Specialist	Realty
Amanda Clements	Ecologist	Vegetation
Glade Hadden	Archaeologist	Cultural & Paleontological Resources
Lynae Rogers	Range Conservationist	Livestock Grazing & Invasive Species

NAME	DISCIPLINE	RESPONSIBILITY
Melissa Siders	Biology Staff Supervisor	Wildlife & Special Status Species
Tom Fresques	Fish Biologist	Fishery
Robin Lacy	Realty Specialist	Realty
Ed Franz	Outdoor Recreation Planner	Wild & Scenic River



Chapter 10 – Glossary

Actual Use - The number of animal unit months consumed by livestock based on the numbers of livestock and grazing dates submitted by the livestock operator and confirmed by periodic field checks by the BLM.

Air Pollution - The contamination of the atmosphere by any toxic or radioactive gases and particulate matter as a result of human activity.

Allotment - An area of land in which one or more livestock operators graze their livestock. Allotments generally consist of BLM lands, but may also include other federally managed, state owned, and private lands. An allotment may include one or more separate pastures. Livestock numbers and periods of use are specified for each allotment.

Allotment Management Plan (AMP) - A concisely written program of livestock grazing management, including supportive measures, if required, designed to attain specific management goals in a grazing allotment. An AMP is prepared in consultation with the permittees, lessees, and other affected interests. Livestock grazing is considered in relation to other uses of the range and to renewable resources, such as watershed, vegetation, and wildlife. An AMP establishes seasons of use, the number of livestock to be permitted, the range improvements needed, and the grazing system.

Analysis of the Management Situation (AMS) - Assessment of the current management direction. It includes a consolidation of existing data needed to analyze and resolve identified issues, a description of current BLM management guidance, and a discussion of existing problems and opportunities for solving them.

Area of Critical Environmental Concern (ACEC) – An area within public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards (from H-6310-1, Wilderness Inventory and Study Procedures).

Atmospheric Deposition - Air pollution produced when acid chemicals are incorporated into rain, snow, fog or mist and fall to the earth. Sometimes referred to as "acid rain" and comes from sulfur oxides and nitrogen oxides, products of burning coal and other fuels and from certain industrial processes. If the acid chemicals in the air are blown into areas where the weather is wet, the acids can fall to Earth in the rain, snow, fog or mist. In areas where the weather is dry, the acid chemicals may become incorporated into dusts or smokes.

Animal Unit Month (AUM) - The amount of forage needed by an "animal unit" (AU) grazing for one month. The animal unit in turn is defined as one mature 1,000-pound cow and her suckling calf.

Big Game - Indigenous ungulate wildlife species that are hunted, such as elk, deer, bison, bighorn sheep, and pronghorn antelope.

Candidate species - Species for which the FWS has sufficient information on their status and threats to support proposing for listing as endangered or threatened under the ESA but for which issuance of a proposed rule is currently precluded by higher priority listing actions. Separate lists for plants, vertebrate animals, and invertebrate animals are published periodically in the Federal Register.

Casual Use - Activities involving practices that do not ordinarily cause appreciable disturbance or damage to the public lands, resources or improvements and, therefore, do not require a right-of-way

grant or temporary use permit (43 CFR 2800). Any short term noncommercial activity which does not cause appreciable damage or disturbance to public lands, their resources or improvements, and which is not prohibited by closure of the lands to such activities (43 CFR 2920). Casual use generally includes the collecting of geochemical, rock, soil, or mineral specimens using hand tools, hand panning, and non-motorized sluicing. It also generally includes use of metal detectors, gold spears, and other battery-operated devices for sensing the presence of minerals, and hand battery-operated dry washers. Casual use does not include use of mechanized earth-moving equipment, truck-mounted drilling equipment, suction dredges, motorized vehicles in areas designated as closed to off-road vehicles, chemicals, or explosives. It also does not include occupancy or operations where the cumulative effects of the activities result in more than negligible disturbance.

Cheatgrass - Cheatgrass is an annual grass that forms tufts up to two feet tall. The leaves and sheaths are covered in short, soft hairs. Cheatgrass invades rangelands, pastures, prairies, and other open areas, and has the potential to completely alter ecosystems it invades. It can completely replace native vegetation and change fire regimes and is most problematic in areas of the western United States with lower precipitation levels.

Clean Air Act of 1963 and Amendments - Federal legislation governing air pollution control.

Closed - Generally denotes that an area is not available for a particular use or uses; refer to specific definitions found in law, regulations, or policy guidance for application to individual programs. For example, 43 CFR 8340.0-5 sets forth the specific meaning of “closed” as it relates to off-highway vehicle use, and 43 CFR 8364 defines “closed” as it relates to closure and restriction orders (from H-1601-1, BLM Land Use Planning Handbook).

Condition Class (Fire Regimes) - Fire Regime Condition Classes are a measure describing the degree of departure from historical fire regimes, possibly resulting in alterations of key ecosystem components such as species composition, structural stage, stand age, canopy closure, and fuel loadings. One or more of the following activities may have caused this departure: fire suppression, timber harvesting, livestock grazing, introduction and establishment of exotic plant species, introduced insects or disease, or other management activities.

Critical Habitat - An area occupied by a threatened or endangered species on which are found physical and biological features (1) essential to the conservation of the species, and (2) which may require special management considerations or protection.

Designated roads and trails - Specific roads and trails identified by the BLM (or other agencies) where some type of motorized vehicle use is appropriate and allowed either seasonally or year-round.

Disposal - Transfer of public land out of federal ownership to another party through sale, exchange, Recreation and Public Purposes Act, Desert Land Entry or other land law statutes.

Easement - A right afforded a person or agency to make limited use of another’s real property for other purposes.

Eligibility - Qualification of a river for inclusion into the National Wild and Scenic Rivers System through the determination that it is free-flowing and, with its adjacent land area, possesses at least one river-related value considered to be outstandingly remarkable (from M-8351, BLM WSR Policy and Program).

Endangered Species - Any species which is in danger of extinction throughout all or a significant portion of its range (from M6840, Special Status Species Manual).

Environmental Impact Statement (EIS) - A detailed statement prepared by the responsible official in which a major Federal action which significantly affects the quality of the human environment is described, alternatives to the proposed action provided, and effects analyzed (from BLM National Management Strategy for OHV Use on Public Lands).

Extensive Recreation Management Area - Areas in which significant recreation opportunities and problems are limited and explicit recreation management is not required. Minimal management actions related to the Bureau's stewardship responsibilities are adequate in these areas.

Federal Land Policy and Management Act of 1976 (FLPMA) - Public Law 94-579, October 21, 1976, often referred to as the BLM's "Organic Act," which provides the majority of the BLM's legislated authority, direction policy and basic management guidance.

Fire Suppression - All work activities connected with fire extinguishing operations, beginning with discovery of a fire and continuing until the fire is completely out.

Functioning at Risk - (1) Condition in which vegetation and soil are susceptible to losing their ability to sustain naturally functioning biotic communities. Human activities, past or present, may increase the risks. Rangeland Reform Final EIS at 26. (2) Uplands or riparian-wetland areas that are properly functioning, but a soil, water, or vegetation attribute makes them susceptible to degradation and lessens their ability to sustain natural biotic communities. Uplands are particularly at risk if their soils are susceptible to degradation. Human activities, past or present, may increase the risks (Rangeland Reform Draft EIS Glossary). SEE ALSO Properly Functioning Condition and Nonfunctioning Condition (from H-4180-1, BLM Rangeland Health Standards Manual).

Grazing Preference - The total number of AUMs on public land apportioned and attached to base property owned or controlled by a lessee.

Habitat - An environment which meets a specific set of physical, biological, temporal or spatial characteristics that satisfy the requirements of a plant or animal species or group of species for part or all of their life cycle.

Integrated Pest Management - The use of all appropriate weed control measures, including fire, as well as mechanical, chemical, biological, and cultural techniques, in an organized and coordinated manner on a site-specific basis.

Intermittent Stream - An intermittent stream is a flowing system under normal weather conditions. During the dry season and throughout minor drought periods, these streams will not exhibit flow. Geomorphologic characteristics are not well defined and are often inconspicuous. In the absence of external limiting factors (pollution, thermal modifications, etc.), biology is scarce and adapted to the wet and dry conditions of the fluctuating water level.

K factor - A soil erodibility factor used in the universal soil loss equation that is a measure of the susceptibility of soil particles to detachment and transport by rainfall and runoff. Estimation of the factor takes several soil parameters into account, including: soil texture, percent of sand greater than 0.10 mm, soil organic matter content, soil structure, soil permeability, clay mineralogy, and coarse fragments. K factor values range from .02 to .64, the greater values indicating the highest susceptibilities to erosion.

Late Season - Fall or late summer grazing.

Land Classification - When, under criteria of 43 CFR 2400, a tract of land has potential for either retention for multiple use management or for some form of disposal, or for more than one form of

disposal, the relative scarcity of the values involved and the availability of alternative means and sites for realization of those values will be considered. Long-term public benefits will be weighed against more immediate or local benefits. The tract will then be classified in a manner which will best promote the public interest.

Land tenure adjustments - Ownership or jurisdictional changes to improve the manageability of BLM lands and their usefulness to the public. The BLM has numerous authorities for repositioning lands into a more consolidated pattern, disposing of lands, and entering into cooperative management agreements. These land pattern improvements are completed primarily through the use of land exchanges, but also through land sales, jurisdictional transfers to other agencies, and through the use of cooperative management agreements and leases.

Land use allocation - The identification in a land use plan of the activities and foreseeable development that are allowed, restricted, or excluded for all or part of the planning area, based on desired future conditions. (from H-1601-1, BLM Land Use Planning Handbook).

Land use plan - A set of decisions that establish management direction for land within an administrative area, as prescribed under the planning provisions of FLPMA; an assimilation of land-use-plan level decisions developed through the planning process outlined in 43 CFR 1600, regardless of the scale at which the decisions were developed. The term includes both RMPs and MFPs. (from H-1601-1, BLM Land Use Planning Handbook).

Lease - Section 302 of FLPMA provides BLM with authority to issue leases for the use, occupancy, and development of public lands. Leases are issued for purposes such as a commercial filming, advertising displays, commercial or noncommercial croplands, apiaries, livestock holding or feeding areas not related to grazing permits and leases, harvesting of native or introduced species, temporary or permanent facilities for commercial purposes (does not include mining claims), residential occupancy, ski resorts, construction equipment storage sites, assembly yards, oil rig stacking sites, mining claim occupancy if the residential structures are not incidental to the mining operation, and water pipelines and well pumps related to irrigation and non-irrigation facilities. The regulations establishing procedures for the processing of these leases and permits are found in 43 CFR 2920.

Lek - An area where certain bird species (such as sage-grouse) assemble to carry on display and courtship behavior.

Limited - Designated areas and trails where the use of off-road vehicles is subject to restrictions, such as limiting the number or types of vehicles allowed, dates and times of use (seasonal restrictions), limiting use to existing roads and trails, or limiting use to designated roads and trails. Under the designated roads and trails designation, use would be allowed only on roads and trails that are signed for use. Combinations of restrictions are possible, such as limiting use to certain types of vehicles during certain times of the year (from BLM National Management Strategy for OHV Use on Public Lands).

Maintenance Action - A minor adjustment to a land use plan that does not require an amendment.

Mitigation -

- (a) Avoiding an impact altogether by not taking a certain action or parts of an action.
- (b) Minimizing an impact by limiting the degree or magnitude of the action and its implementation.
- (c) Rectifying an impact by repairing, rehabilitating, or restoring the affected environment.

(d) Reducing or eliminating an impact over time by preservation and maintenance operations during the life of the action.

(e) Compensating for an impact by replacing or providing substitute resources or environments.

Multiple Use - Managing public lands and their various resource values so that they are utilized in a combination that will best meet the present and future needs of the American people. Making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to changing needs and conditions; the use of some land for less than all of the resources; a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output.

National Wild and Scenic Rivers System - A system of nationally designated rivers and their immediate environments that have outstanding scenic, recreational, geologic, fish and wildlife, historic, cultural, and other similar values and are preserved in a free-flowing condition. The system consists of three types of streams: (1) **recreational** - rivers or sections of rivers that are readily accessible by road or railroad and that may have some development along their shorelines and may have undergone some impoundments or diversion in the past, (2) **scenic** - rivers or sections of rivers free of impoundments with shorelines or watersheds still largely undeveloped but accessible in places by roads, and (3) **wild** - rivers or sections of rivers free of impoundments and generally inaccessible except by trails, with watersheds or shorelines essentially primitive and waters unpolluted.

No Surface Occupancy (NSO) - No Surface Occupancy can be used in one way to define a NSO area where no surface-disturbing activities of any nature or for any purpose would be allowed. For example, construction or the permanent or long-term placement of structures or other facilities for any purpose would be prohibited in an NSO area. No surface occupancy can also be used as a stipulation or mitigation requirement for controlling or prohibiting selected land uses or activities that would conflict with other activities, uses, or values in a given area. When used in this way, the stipulation or mitigation requirement is applied to prohibit one or more specific types of land and resource development activities or surface uses in an area, while other—perhaps even similar—types of activities or uses (for other purposes) would be allowed. For example, protecting important rock art relics from destruction may require closing the area to the staking of mining claims and surface mining, off-road vehicle travel, construction or long-term placement of structures or pipelines, powerlines, general purpose roads, and livestock grazing. Conversely, the construction of fences to protect the rock art from vandalism or from trampling or breakage by livestock, an access road or trail, and other visitor facilities to provide interpretation and opportunity for public enjoyment of the rock art would be allowed. Further, if there were interest in development of leasable minerals in the area, leases for oil and gas, coal, and so forth, could be issued with a “no surface occupancy” stipulation or mitigation requirement for the rock art site, which would still allow access to the leasable minerals from adjacent lands and underground. The term “no surface occupancy” has no relationship or relevance to the presence of people in an area.

Nonfunctioning Condition - (1) Condition in which vegetation and ground cover are not maintaining soil conditions that can sustain natural biotic communities. (2) Riparian-wetland areas are considered to be in nonfunctioning condition when they don't provide adequate vegetation, landform, or large woody

debris to dissipate stream energy associated with high flows and thus are not reducing erosion, improving water quality, or other normal characteristics of riparian areas. The absence of a floodplain may be an indicator of nonfunctioning condition.

Objective - A description of a desired condition for a resource. Objectives can be quantified and measured and, where possible, have established timeframes for achievement.

Off-highway vehicle (OHV) - Any motorized vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain, excluding: (1) any non-amphibious registered motorboat; (2) any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes; (3) any vehicle whose use is expressly authorized by the authorized officer, or otherwise officially approved; (4) vehicles in official use; and (5) any combat or combat support vehicle when used for national defense.

Open - Designated areas and trails where off-road vehicles may be operated, subject to operating regulations and vehicle standards set forth in BLM Manuals 8341 and 8343, or an area where all types of vehicle use is permitted at all times, subject to the standards in BLM Manuals 8341 and 8343.

Outstandingly Remarkable Values - Values among those listed in Section 1(b) of the Wild and Scenic Rivers Act: "scenic, recreational, geological, fish and wildlife, historical, cultural, or other similar values..." Other similar values which may be considered include ecological, biological or botanical, paleontological, hydrological, scientific or research values.

Ozone - A faint blue gas produced in the atmosphere from chemical reactions of such sources as burning coal, gasoline and other fuels, and chemicals found in products including solvents, paints, hairsprays, etc.

Perennial Stream - Perennial streams carry flowing water continuously throughout the year, regardless of weather conditions. It exhibits well-defined geomorphologic characteristics and in the absence of pollution, thermal modifications, or other man-made disturbances has the ability to support aquatic life. During hydrological drought conditions, the flow may be impaired.

Permitted Use - The forage allocated by, or under the guidance of, an applicable land use plan for livestock grazing in an allotment under a permit or lease, and expressed in Animal Unit Months.

Planning Area - A geographic area for which land use and resource management plans are developed and maintained.

Prescribed Burn/Fire - Controlled application of fire to wildland fuels in either their natural or modified state under specified environmental conditions that allow the fire to be confined to a predetermined area and at the same time to produce the fire intensity and rate of spread required to attain planned resource management objectives.

Prevention of Significant Deterioration (PSD) - An air pollution permitting program intended to ensure that air quality does not diminish in attainment areas.

Properly Functioning Condition - (1) An element of the Fundamental of Rangeland Health for watersheds, and therefore a required element of state or regional standards and guidelines under 43 CFR § 4180.2(b). (2) Condition in which vegetation and ground cover maintain soil conditions necessary to sustain natural biotic communities. Riparian wetland areas are functioning properly when adequate vegetation, landform, or large woody debris is present to dissipate stream energy associated with high water flows, thereby reducing erosion and improving water quality; filter sediment, capture bed load, and aid floodplain development; improve floodwater retention and groundwater recharge; develop root

masses that stabilize streambanks against cutting action; develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; and support greater biodiversity. The functioning condition of riparian-wetland areas is influenced by geomorphic features, soil, water, and vegetation. (4) Uplands function properly when the existing vegetation and ground cover maintain soil conditions capable of sustaining natural biotic communities. The functioning condition of uplands is influenced by geomorphic features, soil, water, and vegetation.

Public land - Land or interest in land owned by the United States and administered by the Secretary of the Interior through the BLM without regard to how the United States acquired ownership, except lands located on the Outer Continental Shelf, and lands held for the benefit of Indians, Aleuts, and Eskimos.

Rangeland Health - The degree to which the integrity of the soil and ecological processes of rangeland ecosystems are sustained.

Recreation and Public Purposes Act (of 1926) - The Recreation and Public Purposes Act provided for the lease and sale of public lands determined valuable for public purposes. The objective of the Recreation and Public Purposes Act is to meet the needs of State and local government agencies and non-profit organizations by leasing or conveying public land required for recreation and public purpose uses. Examples of uses made of Recreation and Public Purposes lands are parks and greenbelts, sanitary landfills, schools, religious facilities, and camps for youth groups. The act provides substantial cost-benefits for land acquisition and provides for recreation facilities or historical monuments at no cost.

Resource Management Plan (RMP) - A land use plan as prescribed by the Federal Land Policy and Management Act that establishes, for a given area of land, land-use allocations, coordination guidelines for multiple-use, objectives, and actions to be achieved.

Right-of-Way (ROW) - Means the public lands authorized to be used or occupied for specific purposes pursuant to a right-of-way grant, which are in the public interest and which require rights-of-way over, upon, under, or through such lands.

Riparian Area - A form of wetland transition between permanently saturated wetlands and upland areas. Riparian areas exhibit vegetation or physical characteristics that reflect the influence of permanent surface or subsurface water. Typical riparian areas include lands along, adjacent to, or contiguous with perennially and intermittently flowing rivers and streams, glacial potholes, and the shores of lakes and reservoirs with stable water levels. Excluded are ephemeral streams or washes that lack vegetation and depend on free water in the soil.

Rock Art - Petroglyphs (carvings) or pictographs (paintings) created on natural rock surfaces by native people and depicting their history and culture.

Rotation - Regular change in grazing between pastures in an allotment for a permitted period.

Scenic Byway - Highway route with a roadside or corridor of special aesthetic, cultural, or historic value. An essential part of the highway is its scenic corridor. The corridor may contain outstanding scenic vistas, unusual geologic features, or other natural elements.

Scenic River - A river or section of river that is free of impoundments and whose shorelines are largely undeveloped but accessible in places by roads.

Season of Use - The time during which livestock grazing is permitted on a given range area, as specified in a grazing lease.

Sensitive Species - Species designated as sensitive by the BLM State Director, including species that are under status review, have small or declining populations, live in unique habitats, or require special management. BLM Manual 6840 provides policy and guidance for managing special status species.

Special recreation management area (SRMA) - A public land unit identified in land use plans to direct recreation funding and personnel to fulfill commitments made to provide specific, structured recreation opportunities (including activities, experiences, and benefits). The BLM recognizes three distinct types of SRMAs: community-based, intensive, and undeveloped big open.

State Implementation Plan - A detailed description of the programs a state will use to carry out its responsibilities under the Clean Air Act. State implementation plans are a collection of regulations used by a state to reduce air pollution.

Surface-disturbing Activities (or Surface Disturbance) - The physical disturbance and movement or removal of land surface and vegetation. These activities range from the very minimal to the maximum types of surface disturbance associated with such things as off-road vehicle travel or use of mechanized, rubber-tired, or tracked equipment and vehicles; some timber cutting and forest silvicultural practices; excavation and development activities associated with use of heavy equipment for road, pipeline, power line and other types of construction; blasting; strip, pit, and underground mining and related activities, including ancillary facility construction; oil and gas well drilling and field construction or development and related activities; range improvement project construction; and recreation site construction.

Threatened Species - Any species which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Total Maximum Daily Load - An estimate of the total quantity of pollutants (from point, nonpoint, and natural sources) allowed into waters without exceeding applicable water quality criteria.

Traditional Cultural Property - A property that derives significance from traditional values associated with it by a social and/or cultural group such as an Indian tribe or local community. A traditional cultural property may qualify for the National Register if it meets the criteria and criteria exceptions in 36 CFR 60.4.

Valid Existing Rights - Any legitimate lease established prior to a new authorization, change in land designation, or in regulation.

Visibility (Air Quality) - A measurement of the ability to see and identify objects at different distances.

Visitor Day - Twelve visitor hours that may be aggregated by one or more persons in single or multiple visits.

Visitor Use - Visitor use of a resource for inspiration, stimulation, solitude, relaxation, education, pleasure, or satisfaction.

Visual Resource Management (VRM) Classes - Visual resource management classes define the degree of acceptable visual change within a characteristic landscape. A class is based on the physical and sociological characteristics of any given homogeneous area and serves as a management objective. Categories assigned to public lands based on scenic quality, sensitivity level, and distance zones. Each class has an objective which prescribes the amount of change allowed in the characteristic landscape. (from H-1601-1, BLM Land Use Planning Handbook). The four classes are described below:

Class I provides for natural ecological changes only. This class includes primitive areas, some natural areas, some wild and scenic rivers, and other similar areas where landscape modification activities should be restricted.

Class II areas are those areas where changes in any of the basic elements (form, line, color, or texture) caused by management activity should not be evident in the characteristic landscape.

Class III includes areas where changes in the basic elements (form, line, color, or texture) caused by a management activity may be evident in the characteristic landscape. However, the changes should remain subordinate to the visual strength of the existing character.

Class IV applies to areas where changes may subordinate the original composition and character; however, they should reflect what could be a natural occurrence within the characteristic landscape.

Volatile Organic Compounds (VOCs) - Volatile organic chemicals that produce vapors readily; at room temperature and normal atmospheric pressure. Volatile organic chemicals include gasoline, industrial chemicals such as benzene, solvents such as toluene and xylene, and tetrachloroethylene (perchloroethylene, the principal dry cleaning solvent).

Wild River - A river or section of river that is free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. Wild rivers represent vestiges of primitive America.

Wilderness - A congressionally designated area of undeveloped federal land retaining its primeval character and influence, without permanent improvements or human habitation, that is protected and managed to preserve its natural conditions and that (1) generally appears to have been affected mainly by the forces of nature, with human imprints substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least 5,000 acres or is large enough to make practical its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Wilderness Characteristics - Wilderness characteristics include size, the appearance of naturalness, outstanding opportunities for solitude or a primitive and unconfined type of recreation. They may also include ecological, geological, or other features of scientific, educational, scenic, or historical value. However Section 2(c) of the Wilderness Act of 1964 has been updated by IM- 2003-195, dated June 20, 2003. Indicators of an area's naturalness include the extent of landscape modifications; the presence of native vegetation communities; and the connectivity of habitats. Outstanding opportunities for solitude or primitive and unconfined types of recreation may be experienced when the sights, sounds, and evidence of other people are rare or infrequent, in locations where visitors can be isolated, alone or secluded from others, where the use of the area is through non-motorized, non-mechanical means, and where no or minimal developed recreation facilities are encountered.

Wilderness Study Area (WSA) - A designation made through the land use planning process of a roadless area found to have wilderness characteristics as described in Section 2(c) of the Wilderness Act of 1964.

Wildland Fire - Any fire, regardless of ignition source, that is burning outside of a prescribed fire and any fire burning on public lands or threatening public land resources, where no fire prescription standards have been prepared.

Wildland-Urban Interface (WUI) - An area within or adjacent to an at risk community that has been identified by a community in its wildfire protection plan or, for areas that do not have such a plan, an area extending; 1) ½ mile from the boundary of an at risk community, or 2) 1 ½ miles when other criteria

are met (such as a sustained steep slope or a geographic feature aiding in creating an effective fire break) or is condition class III land, or 3) is adjacent to an evacuation route.



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APPENDICES

Appendix A : PFYC classifications inside D-E NCA

The geology of the DENCA spans a time of roughly 1.7 billion years. From youngest to oldest, **Table A-1** contains a list of major rock units, their PFYC classification, and some of the fossils that have been found in each unit.

Table A-1
Paleontological Resources by Geologic Rock Unit

Qa *Q Modern Alluvium	PFYC 2	Modern bison (buffalo)
Qat *Q Ancient Alluvium	PFYC 3	Musk ox, invertebrates, and plants
Qd Q Glacial Drift of Pinedale and Bull Lake Glaciations	PFYC 3	None known
Km *Mancos Shale	PFYC 3	Dinosaurs (two duck-billed dinosaurs), marine reptiles (plesiosaurs and mosasaurs), fish, sharks, clams, oysters, ammonites, scaphites, baculites, mollusks, plants, crinoids, and others
Kd *Dakota Sandstone	PFYC 3	Dinosaur tracks, plant fragments
Kdb, KJd, KJdw *Burro Canyon Sandstone	PFYC 3	Dinosaurs, including a meat-eating theropod; petrified wood, cycads, <u>Tempskya</u> (fern) wood, and plant impressions that include leaves and flowers
Jm, Jmw, Jme, Jmse, Jmwe *Morrison	PFYC 4-5	Dinosaurs, including the large plant eating sauropods: Apatosaurus (Brontosaurus), Barosaurus, Brachiosaurus, Camasaurus, Diplodocus, Supersaurus, and Ultrasaurus; the meat-eating theropods: Allosaurus, Ceratosaurus, Torvosaurus, and others; and the bird-hipped ornithopods: Dryosaurus, Camptosaurus,

Table A-1
Paleontological Resources by Geologic Rock Unit

		iguanodontid, Stegosaurus, Mymoorapelta, and others; fish (Coccolepis, and one other), lizards, turtles, crocodylians (including Fruitachampsia and Goniopholis), a pterosaur and five families of small primitive mammals (including docodonts, triconodonts (including Priacodon fruitaensis), multituberculates, symmetrodonts, dryolestid eupantotheres, and possibly monotremes, and a new form named <i>Fruitafossor windscheffeli</i>); various invertebrates, including fresh water clams, gastropods (snails), ostracods, conchostrachans, and others; and plants, including conifer trees, seed fern trees, horse tails, cycads, and others
Jmse *Summerville	PFYC 3	Gastropods (snails)
Jme, Jmse, Jmwe *Entrada	PFYC 3	Tracks of small meat-eating dinosaurs
TRkc *Kayenta	PFYC 3	Possible tracks of small meat-eating dinosaurs
TRkc, TRwc *Wingate	PFYC 3	Tracks of small meat-eating dinosaurs
JTRgc *Glen Canyon Group	PFYC 3	See Kayenta, and Wingate
JTRsc, JTRmc, TRkc, TRwc, TRcc, TRc *Chinle	PFYC 4-5	Metoposaurs (giant amphibians), phytosaurs (large “armored crocodiles”), tracks of various amphibians and reptiles, lungfish burrows, insect tracks, and worm and other invertebrate burrowings
TRm Moenkopi	PFYC 3	Tracks of various insects, amphibians, and reptiles
Xb Biotitic Gneiss, Schist, Migmatite	PFYC 1	No fossils
Yg Granitic Rocks of 1400 m.y.	PFYC 1	No fossils
Xg *Granitic Rocks of 1700 m.y.	PFYC 1	No fossils
YXg *Granitic Rocks of 1400 and	PFYC 1	No fossils

Table A-1 Paleontological Resources by Geologic Rock Unit

1700 m.y.

*Also found within the McInnis Canyons National Conservation Area

m.y. = million years

Appendix B: Potential Fossil Yield Classification (PFYC) System.

Occurrences of paleontological resources are closely tied to the geologic units (i.e., formations, members, or beds) that contain them. The probability for finding paleontological resources can be broadly predicted from the geologic units present at or near the surface. Therefore, geologic mapping can be used for assessing the potential for the occurrence of paleontological resources.

Using the Potential Fossil Yield Classification (PFYC) system, geologic units are classified based on the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts, with a higher class number indicating a higher potential. This classification is applied to the geologic formation, member, or other distinguishable unit, preferably at the most detailed mappable level. It is not intended to be applied to specific paleontological localities or small areas within units. Although significant localities may occasionally occur in a geologic unit, a few widely scattered important fossils or localities do not necessarily indicate a higher class; instead, the relative abundance of significant localities is intended to be the major determinant for the class assignment.

The PFYC system is meant to provide baseline guidance for predicting, assessing, and mitigating paleontological resources. The classification should be considered at an intermediate point in the analysis, and should be used to assist in determining the need for further mitigation assessment or actions.

The descriptions for the classes below are written to serve as guidelines rather than as strict definitions. Knowledge of the geology and the paleontological potential for individual units or preservational conditions should be considered when determining the appropriate class assignment. Assignments are best made by collaboration between land managers and knowledgeable researchers.

Class 1 – Very Low. Geologic units that are not likely to contain recognizable fossil remains.

- Units that are igneous or metamorphic, excluding reworked volcanic ash units.
- Units that are Precambrian in age or older.

(1) Management concern for paleontological resources in Class 1 units is usually negligible or not applicable.

(2) Assessment or mitigation is usually unnecessary except in very rare or isolated circumstances.

The probability for impacting any fossils is negligible. Assessment or mitigation of paleontological resources is usually unnecessary. The occurrence of significant fossils is non-existent or extremely rare.

Class 2 – Low. Sedimentary geologic units that are not likely to contain vertebrate fossils or scientifically significant nonvertebrate fossils.

- Vertebrate or significant invertebrate or plant fossils not present or very rare.
- Units that are generally younger than 10,000 years before present.
- Recent aeolian deposits.
- Sediments that exhibit significant physical and chemical changes (i.e., diagenetic alteration).

(1) Management concern for paleontological resources is generally low.

(2) Assessment or mitigation is usually unnecessary except in rare or isolated circumstances.

The probability for impacting vertebrate fossils or scientifically significant invertebrate or plant fossils is low. Assessment or mitigation of paleontological resources is not likely to be necessary. Localities containing important resources may exist, but would be rare and would not influence the classification. These important localities would be managed on a case-by-case basis.

Class 3 – Moderate or Unknown. Fossiliferous sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence; or sedimentary units of unknown fossil potential.

- Often marine in origin with sporadic known occurrences of vertebrate fossils.
- Vertebrate fossils and scientifically significant invertebrate or plant fossils known to occur intermittently; predictability known to be low.

(or)

- Poorly studied and/or poorly documented. Potential yield cannot be assigned without ground reconnaissance.

Class 3a – Moderate Potential. Units are known to contain vertebrate fossils or scientifically significant nonvertebrate fossils, but these occurrences are widely scattered. Common invertebrate or plant fossils may be found in the area, and opportunities may exist for hobby collecting. The potential for a project to be sited on or impact a significant fossil locality is low, but is somewhat higher for common fossils.

Class 3b – Unknown Potential. Units exhibit geologic features and preservational conditions that suggest significant fossils could be present, but little information about the paleontological resources of the unit or the area is known. This may indicate the unit or area is poorly studied, and field surveys may uncover significant finds. The units in this Class may eventually be placed in another Class when sufficient survey and research is performed. The unknown potential of the units in this Class should be carefully considered when developing any mitigation or management actions.

(1) Management concern for paleontological resources is moderate; or cannot be determined from existing data.

(2) Surface-disturbing activities may require field assessment to determine appropriate course of action.

This classification includes a broad range of paleontological potential. It includes geologic units of unknown potential, as well as units of moderate or infrequent occurrence of significant fossils.

Management considerations cover a broad range of options as well, and could include pre-disturbance surveys, monitoring, or avoidance. Surface-disturbing activities will require sufficient assessment to determine whether significant paleontological resources occur in the area of a proposed action, and whether the action could affect the paleontological resources. These units may contain areas that would be appropriate to designate as hobby collection areas due to the higher occurrence of common fossils and a lower concern about affecting significant paleontological resources.

Class 4 – High. Geologic units containing a high occurrence of significant fossils. Vertebrate fossils or scientifically significant invertebrate or plant fossils are known to occur and have been documented, but may vary in occurrence and predictability. Surface disturbing activities may adversely affect paleontological resources in many cases.

Class 4a – Unit is exposed with little or no soil or vegetative cover. Outcrop areas are extensive with exposed bedrock areas often larger than two acres. Paleontological resources may be susceptible to adverse impacts from surface disturbing actions. Illegal collecting activities may impact some areas.

Class 4b – These are areas underlain by geologic units with high potential but have lowered risks of human-caused adverse impacts and/or lowered risk of natural degradation due to moderating

circumstances. The bedrock unit has high potential, but a protective layer of soil, thin alluvial material, or other conditions may lessen or prevent potential impacts to the bedrock resulting from the activity.

- Extensive soil or vegetative cover; bedrock exposures are limited or not expected to be impacted.
- Areas of exposed outcrop are smaller than two contiguous acres.
- Outcrops form cliffs of sufficient height and slope so that impacts are minimized by topographic conditions.
- Other characteristics are present that lower the vulnerability of both known and unidentified paleontological resources.

(1) Management concern for paleontological resources in Class 4 is moderate to high, depending on the proposed action.

(2) A field survey by a qualified paleontologist is often needed to assess local conditions.

(3) Management prescriptions for resource preservation and conservation through controlled access or special management designation should be considered.

(4) Class 4 and Class 5 units may be combined as Class 5 for broad applications, such as planning efforts or preliminary assessments, when geologic mapping at an appropriate scale is not available. Resource assessment, mitigation, and other management considerations are similar at this level of analysis, and impacts and alternatives can be addressed at a level appropriate to the application.

The probability for impacting significant paleontological resources is moderate to high, and is dependent on the proposed action. Mitigation considerations must include assessment of the disturbance, such as removal or penetration of protective surface alluvium or soils, potential for future accelerated erosion, or increased ease of access resulting in greater looting potential. If impacts to significant fossils can be anticipated, on-the-ground surveys prior to authorizing the surface disturbing action will usually be necessary. On-site monitoring or spot-checking may be necessary during construction activities.

Class 5 – Very High. Highly fossiliferous geologic units that consistently and predictably produce vertebrate fossils or scientifically significant invertebrate or plant fossils, and that are at risk of human-caused adverse impacts or natural degradation.

Class 5a – Unit is exposed with little or no soil or vegetative cover. Outcrop areas are extensive with exposed bedrock areas often larger than two contiguous acres. Paleontological resources are highly susceptible to adverse impacts from surface disturbing actions. Unit is frequently the focus of illegal collecting activities.

Class 5b – These are areas underlain by geologic units with very high potential but have lowered risks of human-caused adverse impacts and/or lowered risk of natural degradation due to moderating circumstances. The bedrock unit has very high potential, but a protective layer of soil, thin alluvial material, or other conditions may lessen or prevent potential impacts to the bedrock resulting from the activity.

- Extensive soil or vegetative cover; bedrock exposures are limited or not expected to be impacted.
- Areas of exposed outcrop are smaller than two contiguous acres.
- Outcrops form cliffs of sufficient height and slope so that impacts are minimized by topographic conditions.
- Other characteristics are present that lower the vulnerability of both known and unidentified paleontological resources.

(1) Management concern for paleontological resources in Class 5 areas is high to very high.

(2) A field survey by a qualified paleontologist is usually necessary prior to surface disturbing activities or land tenure adjustments. Mitigation will often be necessary before and/or during these actions.

(3) Official designation of areas of avoidance, special interest, and concern may be appropriate. The probability for impacting significant fossils is high. Vertebrate fossils or scientifically significant invertebrate fossils are known or can reasonably be expected to occur in the impacted area. On-the-ground surveys prior to authorizing any surface disturbing activities will usually be necessary. On-site monitoring may be necessary during construction activities.

Appendix C: Summary of Recent Land Health Assessments in the Dominguez-Escalante National Conservation Area

Prepared by Ben Blom, November 2010

I. Background

The Dominguez-Escalante National Conservation Area (D-E NCA) and the Dominguez Canyon Wilderness were created through legislative designation in the Omnibus Public Lands Act of 2009. The D-E NCA encompasses 209,610 acres of BLM-managed land in Mesa, Delta and Montrose counties in western Colorado. Within the D-E NCA, 66,280 acres make up the Dominguez Canyon Wilderness, most of which was once part of the Dominguez Canyon Wilderness Study Area. In addition to cutting across county lines, both the NCA and the Wilderness cut across BLM administrative boundaries. Thus, the NCA and the Wilderness are jointly managed by the BLM's Grand Junction (GJFO) and Uncompahgre Field Offices (UFO).

BLM guidance in Title 43 CFR 4180, and more recently in IM 2009-007, requires BLM field offices to assess land health within field office boundaries. Until recently, BLM guidance did not include recommendations for how data should be collected or interpreted for these purposes, nor did it provide specific guidance on how land health assessments were to be incorporated into existing management. In the absence of specific guidance, there is local variation in how BLM field offices conduct and apply land health assessments.

Prior to the NCA's designation in 2009, both BLM field offices (GJFO and UFO) had already established protocols for evaluating whether lands within their field office boundaries met rangeland health standards. At the time of designation, GJFO was still in the process of evaluating all of its managed lands for the first time. UFO, on the other hand, had already completed one round of land health assessments on all of its lands and was set to begin a second round that would allow UFO staff to evaluate land health trends over time. The two field offices had also taken different philosophical and methodological approaches to land health assessments by the time of designation.

This summary document seeks to facilitate comparison across the two field offices' LHAs for an overall evaluation of land health in the D-E NCA. This document does not seek to amend each field offices' LHA reports, but simply explain how and where a direct comparison of land health across field office boundaries can and should be made. Throughout this summary document, references are made to the original LHAs, which are included as appendices to this report.

II. General Methodological Similarities Between the UFO and GJFO Approaches to Land Health Assessments in the Dominguez-Escalante NCA

- I. The general classes of determinations that were made for upland sites (i.e. meeting, not meeting or meeting with problems) were generally consistent across both field offices. While 'meeting with problems' is not a required category, this determination was used by both field offices. The 'meeting with problems' determination distinguishes between areas where indicators revealed land to be in good condition (e.g., 'meeting'), and areas that had significant problems but that still met land health standards (e.g., 'meeting with problems'). 'Meeting with Problems' also serves as a trigger for additional consideration to land managers when making management decisions that could exacerbate existing problems. This similarity between field offices includes only Standards 1, 3 and 4. It excludes Standard 2 (Riparian Health) and Standard 5 (Water Quality), which evaluate riparian and water resource health.

2. Both field offices used the same 5 Colorado Land Health Standards as the basis for land health determinations.
3. Both field offices used a mix of data collection and professional judgment in order to make land health determinations.
4. Both field offices used ecological sites as baselines against which land health standards could be measured, and sampled these ecological sites in order to make land health determinations. The source used to identify ecological sites, however, was different between the two field offices.

III. **General Methodological Differences Between UFO and GJFO Approaches to Land Health Assessments in the Dominguez-Escalante NCA**

While consistency should exist across field offices at a broad scale regarding determinations on land health, major differences exist in the methods used to arrive at these determinations. These differences led to some inconsistencies regarding land health determinations across field office boundaries in the NCA. Some of these inconsistencies were resolved in the making of this summary (Section IV). The following list highlights some general differences in LHA methodologies between the two offices and discusses how they may have led to inconsistencies in land health determinations and inferences made from those determinations (i.e. causal factors leading to land health problems and proposed remedies for land health problems). Differences related to specific standards are discussed in Section IV.

I. Establishment of Reference Sites

GJFO: Reference sites were derived from NRCS ecological/range site descriptions and soil mapping unit descriptions. When site visits showed significant deviations from NRCS mapping units, expectations were adjusted for those mapping units in making land health determinations. For example, if the NRCS map suggested that an area should be open grassland, but old and decadent pinyon-juniper woodland was found on the site, then land health at this site was not downgraded for lacking appropriate grassland species because this deviation from the described site was due to mapping problems and not land health problems.

UFO: NRCS site descriptions were considered inadequate based on concerns about the accuracy of these descriptions, and because these descriptions were considered out-dated. In an effort to improve upon NRCS site descriptions, reference sites were refined and re-defined using data collected during the first round of LHAs in UFO from 1998 to 2009. The area within the NCA's boundary was the first LHA unit in the UFO to be derived from a refined set of ecological reference sites that conformed to the specific range of soil and vegetation sites found in UFO. Data collected during field visits was then compared to the average values for the same ecological site in the field office to determine if the particular area was 'meeting', 'meeting with problems' or 'not meeting'.

Result: As a result of these differences in the procedure for defining ecological reference sites, the baselines against which current land health condition was measured were different across the field office boundary in the NCA. As an example of how this could impact the results of LHAs, UFO ecological sites allow for a wider range for the Pinyon-Juniper vegetation cover type than the NRCS sites used by GJFO. Therefore, PJ invasion was viewed as a more natural process in UFO than in GJFO (discussed again in Section V under Standard 3).

2. Data collection methodologies

GJFO: The methodology found in Technical Reference 1734-6, Interpreting Indicators of Rangeland Health, was used to make determinations for Standard 1 (Soils) and Standard 3 (Vegetation). For Standard 2 (Riparian health), standardized proper functioning condition (PFC) protocols were used for data collection. Standard 4 (Special Status Species) was assessed through the observations made during field visits. For Standard 5 (water quality), data was collected and compared to state standards for water quality management in making determinations.

UFO: Data was collected using a different methodology for Standards 1 and 3 than the one found in Technical Reference 1734-6 (please see UFO LHA document for a description of the methods used). For Standard 2, PFC protocols were used in combination with green-line transects and interpretation of data from upland sites that contribute sediment and water to the riparian area. Standard 4 was assessed by interpreting field data and determining whether the site was providing sufficient habitat for special status wildlife and vegetation. For Standard 5, data on road density and stream channel condition were used in addition to water quality data.

Result: While data was collected differently across field offices, there were a number of similarities in the data used to make determinations. For example, both field offices relied heavily on canopy cover and vegetation species composition in when making determinations for Standard 3. Visual evidence of erosion and the formation of rills and pedestals was relied on to make determinations under Standard 1.

3. Relationship between LHAs and other ongoing monitoring

GJFO: Land health assessments are used to ‘red flag’ areas of concern where ESI and trend data should be re-evaluated, and where management may need to be adjusted.

UFO: Ongoing rangeland and development monitoring has been incorporated into land health assessments. For example, current LHA data collection is done at sites where data has already been collected for rangeland monitoring, thus allowing UFO to better examine long-term trends as a part of LHAs. Development monitoring was also incorporated into LHAs, based on concerns that developments were causing significant land health problems across the landscape.

Result: UFO’s incorporation of other monitoring in LHAs has served to increase the utility of LHAs as a tool to evaluate trends in land health and to improve the repeatability of LHAs. It has also served to increase the scope of the utility of LHAs beyond the range program, and allowed for the use of LHA to assist in budget submissions for restoration projects.

4. Use of Interdisciplinary Teams (IDTs)

GJFO: An LHA specialist (Harley Metz) collected all field data, with the occasional help of other resource specialists. Following data collection, the LHA document was written by an ecologist (Anna Lincoln) with the help of a multiple resource specialist in GJFO.

UFO: Interdisciplinary teams (IDTs) were used during field visits. Once data had been collected, IDTs re-convened to analyze the data and to make consensus determinations on LHA standards. An ecologist (Amanda Clements) oversees the entire monitoring program in UFO.

Result: Because of a heavier reliance in UFO on IDTs, LHAs incorporated a wider range of perspectives in UFO. While GJFO benefits from having one team that collects all data (thus

increasing replicability), the range of perspectives in making land health determinations is more limited. This likely impacted the observations made during site visits, which may have impacted the ultimate LHA determinations. For example, the presence of a wildlife biologist on field visits and in office meetings about LHA impacted determinations for Standard 4 (Special Status Species) because habitat suitability for wildlife species was more explicitly incorporated. The reliance on IDTs throughout the process in UFO also impacted the causal factors for land health problems that were identified in the UFO LHA report.

5. Location Selection of Data Collection Points

GJFO: The siting of data collection points was left to the judgment of the Land Health Assessment field crew. Points were selected in order to be most representative of the ecological site in which these points were found and to fully represent grazing allotments, vegetation types and vegetation treatments. Points were purposely chosen to be distant from developments that could be impacting land health. Because this was the first round of LHAs in the Dominguez area, these points had not been visited in previous years.

UFO: Points were chosen prior to field visits in order to replicate earlier monitoring efforts and in order to fully represent allotments, vegetation types and vegetation treatments. Most of these points had been visited in the previous round of LHAs, which were completed in 1998 in the Escalante landscape unit. This allowed for an assessment of trend by comparing data and photographs from 1998 to 2009. In addition, developments were specifically sought out for the development analysis portion of Land Health Assessments and independently sampled in order to evaluate their impact on land health.

Result: By piggybacking on previous monitoring studies, the UFO LHA allows for evaluation of land health trend to a greater degree than GJFO. However, this difference in data collection did not likely impact the general determinations (e.g., 'meeting', 'meeting with problems', 'not meeting') made for each ecological site.

IV. Changes Made During the Creation of This Summary

Some changes were made to the Land Health Assessments in order to facilitate comparisons across the two field offices. For this reason, numbers displayed in this summary report are slightly different than those in the actual reports themselves.

1. For the purposes of this summary, all lands within the designated NCA boundaries are included. Lands that were outside the NCA boundary were not included, and lands within the NCA that were not included are considered 'not completed'. Percentages displayed are for the amount of land within NCA boundaries.
2. For upland sites in both field offices, ecological sites were determined to be 'not meeting' if any of the three upland standards (soils, vegetation or special status species) were determined to be 'not meeting'. Likewise, ecological sites were determined to be 'meeting with problems' if any of the three standards were determined to be 'meeting with problems', but none of the standards were determined to be 'not meeting'. Ecological sites were determined to be 'meeting' LHA standards if they were determined to be 'meeting' across all three standards. These changes were made in order to increase consistency across offices.

3. All assessments followed the following determination categories: “meeting”, “meeting with problems”, “not meeting” and “not completed”. Lands classified as ‘Meets-Assumed’ in the UFO LHA were classified as ‘meeting’ in this summary document, as this distinction was not made in the GJFO LHA.

V. NCA Findings

Overall Assessment of Upland Sites (Map 1)

	Land Meeting LHA Standards (acres)	Land Meeting LHA Standards with Problems (acres)	Land Not Meeting LHA Standards (acres)	Land Not Completed (acres)
UFO	74,647 (63%)	19,278 (16%)	11,134 (9%)	13,034 (11%)
GJFO	86,662 (87%)	8,663 (9%)	1,796 (2%)	2,674 (3%)
Total	161,308 (74%)	27,941 (13%)	12,931 (6%)	15,708 (7%)

In general, GJFO (and UFO to a lesser extent) found that lands within the NCA were in better condition than other lands within field office boundaries. The fact that the majority of the NCA is ‘meeting’ may be due in part to the fact that much of the NCA is remote from a major population center. The fact that more area on the UFO side of the NCA is either ‘not meeting’ or ‘meeting with problems’ may be partially due to the relatively greater accessibility of this side of the NCA to a population center (Delta). This greater proximity to a population center may have led to more concentrated historical livestock grazing on this side of the NCA. This may also be a product of the fact that allotments on the UFO side of the NCA are more numerous and smaller in size, which may have contributed to greater historical livestock concentrations on the UFO side of the NCA (Map 2).

Standard 1: Soils (Map 3)

	Land Meeting Standard 1 (acres)	Land Meeting Standard 1 with Problems (acres)	Land Not Meeting Standard 1 (acres)	Land Not Evaluated (acres)
UFO	95,319 (81%)	6,071 (5%)	3,669 (3%)	13,034 (11%)
GJFO	93,082 (93%)	3,155 (3%)	884 (1%)	2,674 (3%)
Total	188,401 (87%)	9,226 (4%)	4,553 (2%)	15,708 (7%)

Both field office LHAs looked critically at the presence of gullies, flow paths and pedestals in making determinations for Standard 1, as evidence of soil erosion. GJFO also dug soil pits and measured soil stability at each site for evidence of accelerated or excessive erosion. UFO, in comparison to GJFO, looked more closely at above ground evidence of soil erosion and at vegetation in making Standard 1 determinations. Areas with low perennial basal cover were considered to be ‘not meeting’ or ‘meeting with problems’ for Standard 1 in UFO because of potential for accelerated or excessive erosion.

Comparatively, the GJFO was more focused on evidence of active or recent soil erosion in making Standard 1 determinations.

In the area of the NCA that lies between the Gunnison River and Highway 50, UFO made the determination that much of this land was either ‘not meeting’ or ‘meeting with problems’ for Standard 1 while GJFO determined the majority of these sites to be ‘meeting’ for Standard 1. This is due to the fact that UFO was critical of sites (i.e. ‘meeting with problems’ or ‘not meeting’) that had low perennial vegetation basal cover, while GJFO considered this to be a problem addressed under Standard 3, Healthy Plant Communities. This entire area of the NCA has low perennial vegetation cover and the potential for accelerated and excessive soil erosion. Historic grazing and drought were major causes of LHA Standard 1 problems on both sides of this part of the NCA. On the UFO side, a number of developments including pipeline right of ways were also identified as factors that contributed to Standard 1 land health problems in this area of the NCA.

Standard 2: Riparian Areas

	Land Meeting Standard 2 (acres)	Land Meeting Standard 2 with Problems (acres)	Land Not Meeting Standard 2 (acres)	Land Not Evaluated (acres)
UFO	628 (25%)	1,213 (48%)	232 (9%)	457 (18%)

The two field offices approached Standard 2 differently. GJFO used the standard proper functioning condition (PFC) methodology and criteria in making Standard 2 determinations. As a result, their data was reported in miles. Riparian areas in the GJFO side of the NCA have now been evaluated twice. UFO, on the other hand, used a wider range of data that included PFC, and reported their results in acres using GIS mapping software. UFO also used green-line transects in making determinations for Standard 2 and were critical of the presence of non-natives and disrupted flow regimes impacted by upstream diversions and dams. GJFO assessed only riparian condition under the assumption that diversions and dams will continue to impact the flow regime in the foreseeable future. Because both field offices collected PFC data, a direct comparison between the two field offices would only be appropriate in comparing PFC, rather than LHA data. PFC data is displayed below. An interpretation of this PFC data will be done in the analysis of the management situation (AMS), instead of in this document.

	Miles determined to be properly functioning (PFC)	Miles determined to be functioning at risk (FAR)	Miles determined to be not functioning (NF)	Miles not completed
UFO	34 (22%)	12 (8%)	36 (23%)	74 (47%)
GJFO	56 (100%)	0 (0%)	0 (0%)	0 (0%)
Total	91 (43%)	12 (6%)	36 (17%)	74 (35%)

Standard 3: Native Communities (Map 4)

	Land Meeting Standard 3 (acres)	Land Meeting Standard 3 with Problems (acres)	Land Not Meeting Standard 3 (acres)	Land Not Evaluated (acres)
UFO	75,545 (64%)	20,288 (17%)	9,226 (8%)	13,034 (11%)
GJFO	86,662 (87%)	8,888 (9%)	1,572 (2%)	2,674 (3%)
Total	162,207 (74%)	29,176 (13%)	10,797 (5%)	15,708 (7%)

Both field offices examined ground cover and vegetation composition in making determinations for Standard 3. Both field offices looked particularly critically at the presence of noxious weeds, or annual invasives such as cheatgrass. In addition, both field offices looked for the presence of a full vegetative assemblage (grasses, trees/shrubs and forbs), relative to similar sites in the region. Regardless, 3 major philosophical differences impacted LHA determinations between the two field offices:

1. Crested Wheatgrass, a non-native grass planted in many areas on both sides of the NCA following chaining treatments, was treated differently by the two field offices. In UFO, sites that continued to be dominated by Crested Wheatgrass at the expense of native grasses were considered to be not meeting or meeting with problems. In GJFO, Crested Wheatgrass seedings were evaluated in relation to the objectives of earlier treatment. Therefore, GJFO was less critical of Crested Wheatgrass dominance than the UFO.
2. UFO distinguished between cool and warm season grasses in examining the vegetative assemblage of sites. Sites that lacked one of these vegetative components, but that were expected to have these components, were judged to be meeting with problems or not meeting for Standard 3. GJFO, on the other hand, did not distinguish between warm and cool season grasses.
3. The spread of Pinyon Pine and Juniper into sites that were previously dominated by shrubs and grasses was treated differently across field office boundaries. UFO used more recent NRCS ecological site descriptions when comparing sites to a reference state. These newer descriptions consider Pinyon and Juniper to be natural components of a wider range of ecological sites. Therefore, UFO generally treated PJ invasion as a natural process in most instances. GJFO, on the other hand, used an older set of NRCS site descriptions that considers Pinyon and Juniper to be a natural component of fewer ecological sites. As a result, GJFO was more critical of sites undergoing PJ invasion than was UFO.

Regardless of the philosophical differences listed above, vegetative communities appeared to have more problems in the more accessible areas of the NCA. This includes the regions along Highway 50, the southeast region of the NCA that is closest to the population center of Delta and the Cactus Park/Gibbler region on the northern side of the NCA. This is likely due to more concentrated recreation and livestock grazing in these areas, which tends to lead to reduced vegetative cover and the spread of noxious weeds. Developments, such as range improvements and rights of way, are also more common in these accessible areas. Because developments are generally associated with the spread of noxious weeds and higher concentrations of livestock and well-traveled roads, they also help explain the pattern of land health problems closer to more accessible parts of the NCA.

The Dominguez Canyon Wilderness, which sees less concentrated use, had a higher percentage of meeting land for Standard 3 (87%, compared to 74% for the entire NCA).

Standard 4: Special Status Species

	Land Meeting Standard 4 (acres)	Land Meeting Standard 4 with Problems (acres)	Land Not Meeting Standard 4 (acres)	Land Not Evaluated (acres)
UFO	75,545 (64%)	19,042 (16%)	10,472 (9%)	13,034 (11%)
GJFO	97,121 (97%)	0 (0%)	0 (0%)	2,674 (3%)
Total	172,666 (79%)	19,042 (9%)	10,472 (5%)	15,708 (7%)

The two field offices' assessments for Standard 4 are not compatible for the NCA. Both field offices recognized that LHAs are not as useful for special status species monitoring because of the wide spatial scale of LHAs compared to the small spatial scale relevant to special status species. GJFO operated under the assumption that unless there was visible evidence of special status species trampling or harassment, lands were considered to 'meeting' for Standard 4. UFO, on the other hand, assessed the suitability of habitat within the larger landscape in making this determination. For example, if a particular ecological site had the potential to provide important habitat for Desert Bighorn Sheep but was failing to do so because of a lack of forage it could be considered 'not meeting' or 'meeting with problems' for Standard 4.

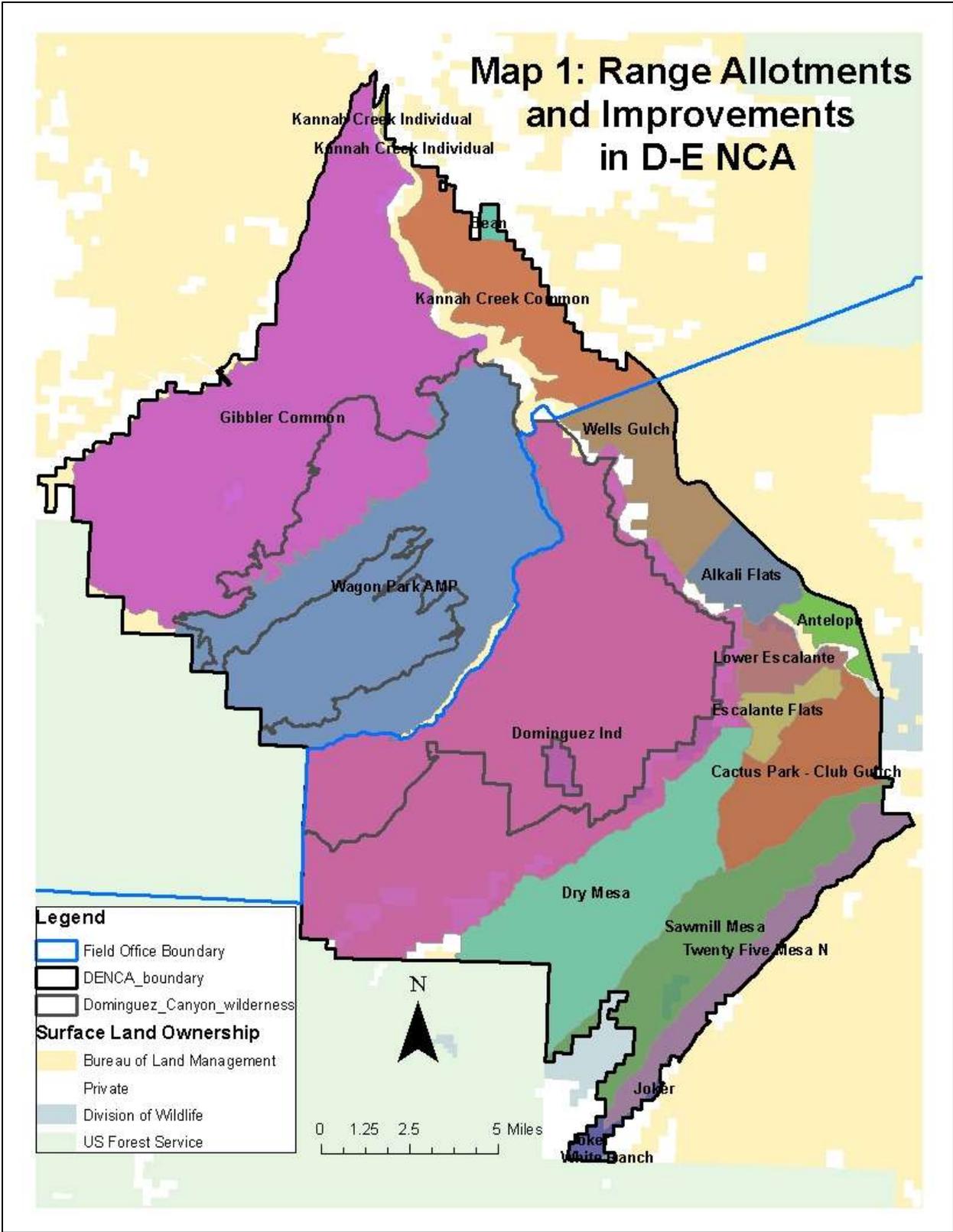
As a result of this difference in LHA philosophies, acreage numbers for Standard 4 are not comparable across the field office boundary in the NCA. Data on individual Special Status Species will be assessed in the AMS based on T&E species county lists from USFWS and occurrence data from the Colorado Natural Heritage Program (CNHP).

Standard 5: Water Quality

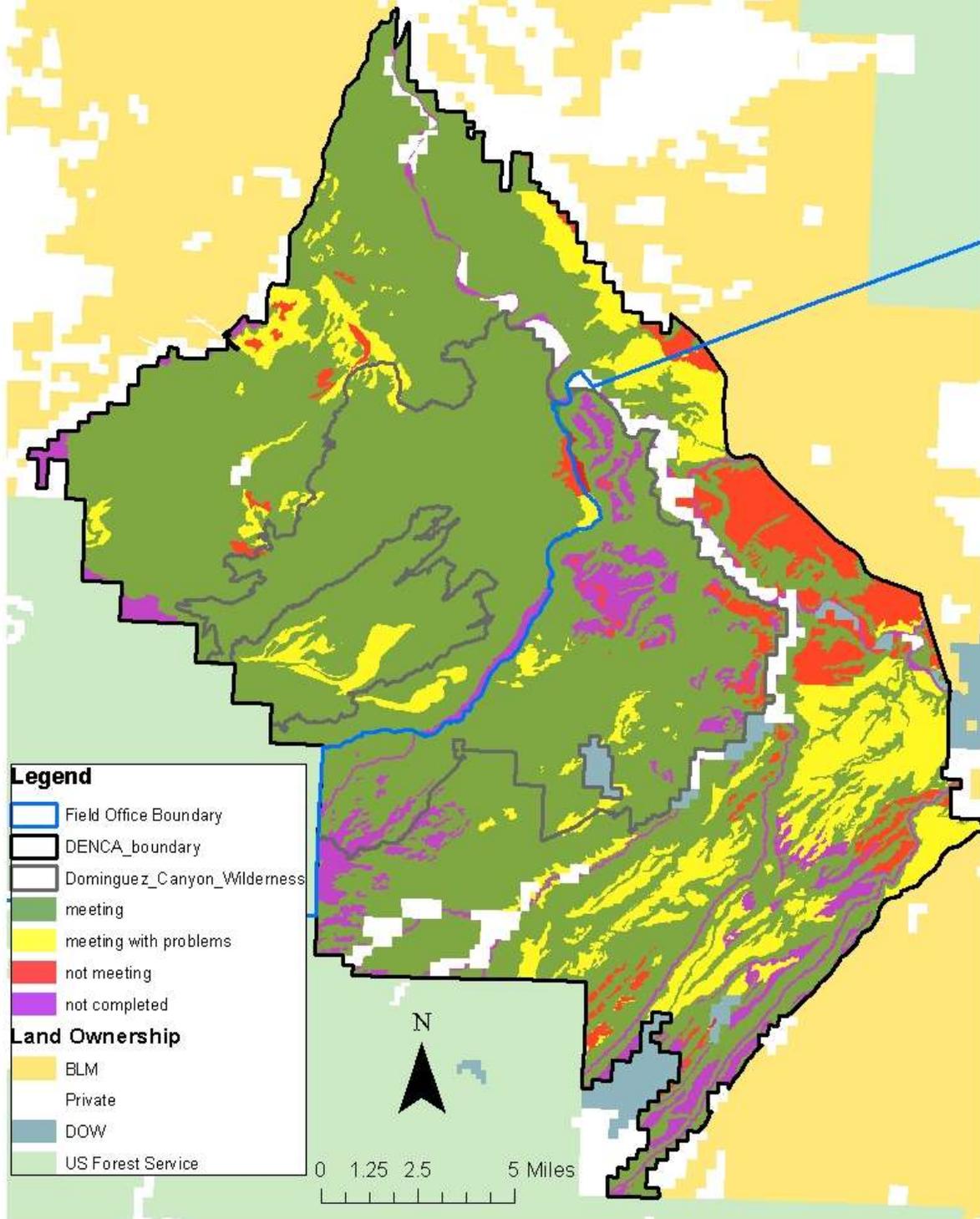
	Land Meeting Standard 5 (acres)	Land Meeting Standard 5 with Problems (acres)	Land Not Meeting Standard 5 (acres)	Land Not Evaluated (acres)
UFO	1,014 (40%)	1,059 (42%)	0 (0%)	457 (18%)

Water quality will be addressed in the AMS.

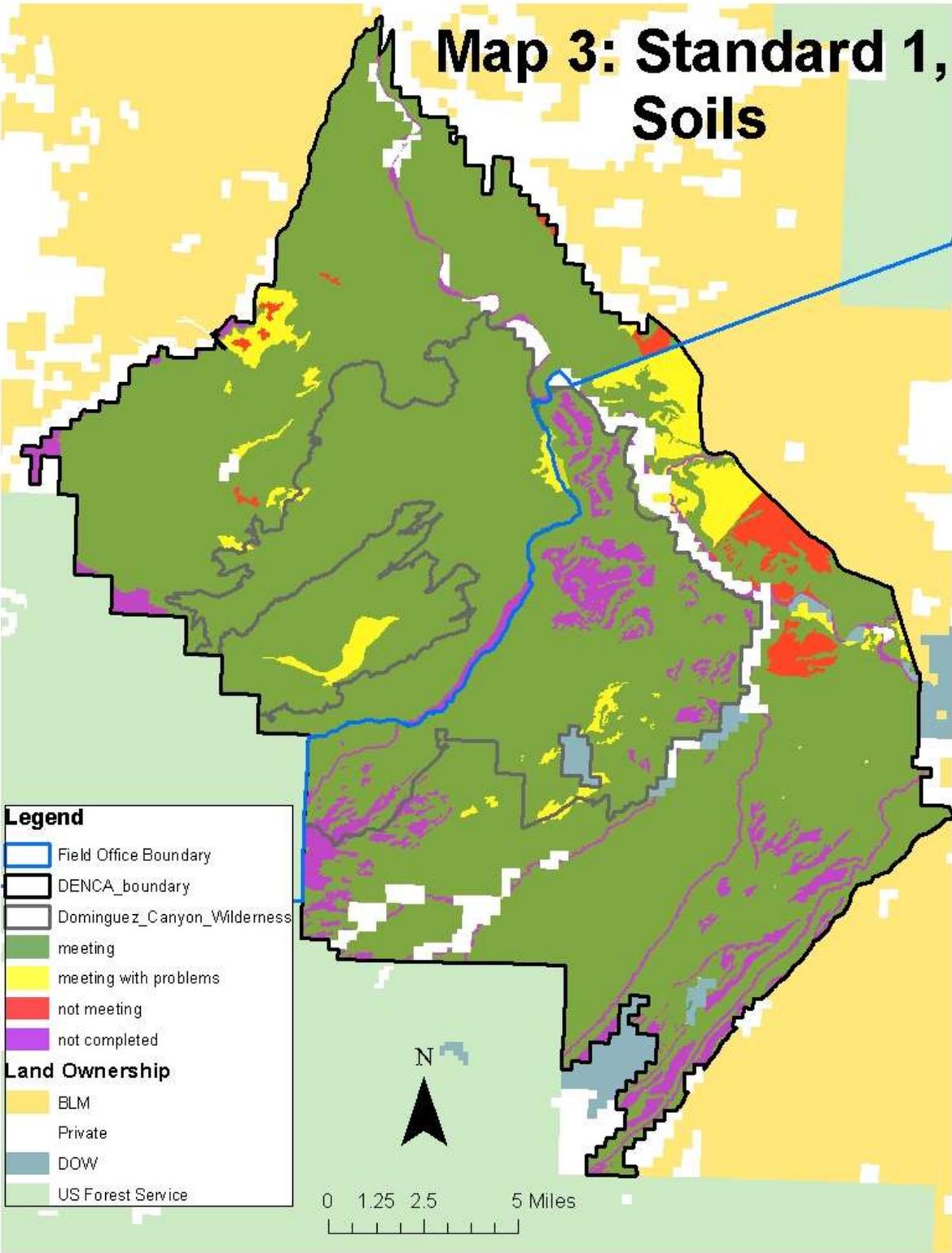
VI. Appendices



Map 2: LHA Determinations for Upland Sites



Map 3: Standard 1, Soils



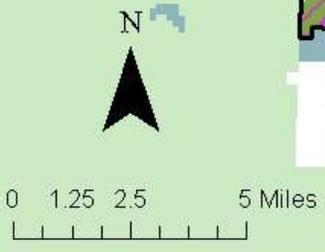
Map 4: Standard 3, Healthy Plant Communities

Legend

- Field Office Boundary
- DENCA_boundary
- Dominguez_Canyon_Wilderness
- meeting
- meeting with problems
- not meeting
- not completed

Land Ownership

- BLM
- Private
- DOW
- US Forest Service



Appendix D: Report for D-E NCA focus groups

Produced by Natural Resource and Land Policy Institute

Mesa State College

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(Please direct questions or comments to Tim Casey PhD. tcasey@mesastate.edu)

Introduction

Aside from traditional public land uses, like grazing, the Bureau of Land Management has begun to recognize the opportunity to manage for the beneficial outcomes that result from recreation. These include benefits that accrue to the individual (quality-of-life), to the community (in social, political, and economic terms), and to the environment (landscape and natural systems maintenance). The recognition of these benefits has necessitated the use of diverse investigative methods that reflect changes in management practice and can support and inform those practices. Gathering public input on public land management issues has become increasingly reliable because of the diversity of methods available. Such diverse methods are not only useful but necessary in untangling the complex issues and concerns attendant on managing for not only traditional public land use but also for emerging and changing recreational use.

In the past, BLM recreational planning has taken several forms. In activity-focused management, the focus solely on activities fails to yield an explanation of why a particular activity occurs in a specific place or what the results of recreating in a particular way might produce. While still a management option, activity-focused management is enhanced by an experience-based approach. Experience-based strategies attend to the importance of where recreation takes place. It is not enough to know that people hike on public lands; it is also important to know why certain locations—because of views or archeological points of interest—are more important to hikers. This approach regards recreation as something more than simply a sweaty activity and indicates that users have less tangible values that they attach to public lands. Finally, outcome focused management combines the virtues of both activity-based and experience-based strategies with a recognition of the importance of the results of such recreational practices. If views are what draw users to public lands, the outcome of resource extraction has to be balanced against views. Clearly management plans that incorporate all three models require a diversity of methods to untangle their complexity. This reports the results of the use of diverse methods in analyzing and supporting recreational decisions about the Dominguez-Escalante National Conservation Area (D-E NCA) and the newly created wilderness area that is a part of it.

Methodology

Focus groups are part of the standard research portfolio available to and encouraged by the BLM as part of the RMP process. What focus groups add to surveys is the language which groups use to describe and explain their own preferences. Participants decide how to discuss the management plans, the terms of that discussion, and the justifications or explanations for those terms. According to one argument, “[t]he interrelationships between a variety of issues and

concerns, while complex, provide insights that should guide policymakers' decisions by offering a better picture of the preferences and opinions of diverse groups of citizens about the implementations of policy" (McCarney, Shreckhise, and Lovrich 1999 155). Focus group research is centered on the participants and driven by the participants, rather than by the researchers. In this way, it leaves rooms for ideas and information to come from, rather than being imposed *on* the natural dialogue. Since the participants in the planning process are also the most regular users of the public lands under discussion, this is not simply a gesture of good will on the part of the BLM, but may provide essential clues as to how to express planning decisions.

In combining I-clicker technology with a focus group format, the NRLPI was able to make the best use of the short time frame available for conducting the interviews. Since researchers had limited time for each meeting, the combination of I-clickers allowed researchers to see immediately where areas of consensus or areas of disagreement existed. In this way, the maximum amount of time and discussion could be devoted to an examination of the reasons why such a range of opinion might exist.

The I-clicker technology used is fairly new. By linking each I-clicker to the central computer, researchers could show participants the group's responses to any question. Responses were displayed as a bar graph at the end of a few seconds when all participants had had the opportunity to input their individual responses. Anonymity was maintained because, while the group could see the final responses represented as a bar graph, there was no way of assigning any particular vote to any particular person. The I-clickers also include technology that allows the researchers to see if any participant changed their response before the time allowed expired and how long it took each respondent to settle on a particular "vote." These two pieces of additional information might allow investigators to make some statements about the certainty or stability of participants' opinions.

When and Where to meet

The D-E NCA is located halfway between two population centers, Grand Junction and Delta. Citizens from both locations are frequent visitors to the NCA and significant stakeholders in the process, therefore it was determined that the focus groups should be held in both locations. Two non-wilderness focus group meetings were held in Delta and two in Grand Junction. The zone that each focus group covered was determined by proximity to the population centers. Zone 1 and 3 meetings were held in Grand Junction because these zones are principally accessed by the northern and western boundaries of the NCA and Grand Junction is located northwest of the NCA. Meetings for zones 2 and 5 were held in Delta because zone 5 is on the eastern edge of the NCA adjacent to Delta, and zone 2 (the river corridor) is principally accessed for water-based recreation at points in Delta County (although many of the takeouts are located in Mesa County).

Because stakeholders for the wilderness area are located in both population centers, it was decided to hold two focus groups -- one in Delta and one in Grand Junction. The questions for each of these focus groups were the same (with a few noted additional follow-up questions in Delta that emerged from the conversation). However, the responses to the same questions differed dramatically between the two locations. In hindsight, choosing two locations for the same meetings on wilderness turned out to be an important dimension of this research and their results. It is recommended, given the differences between responses from a rural community

(Delta) and a regional city (Grand Junction) that another focus group be conducted in a “local” urban area such as Denver or Salt Lake City – just to compare the possible differences in attitudes and values regarding the Dominguez Canyon Wilderness. Such a focus group was not part of the original study.

Invitations and Populating groups

The focus groups were populated through open invitation to all interested members of the public. Press releases announced meeting times, locations and zones of focus. All meetings were also posted on the BLM website and invitations were emailed to earlier contact lists generated by NRLPI focus groups sponsored by the county commissioners of Mesa, Delta and Montrose counties. Because of the open invitation format, these focus groups were facilitated as focused scoping public meetings.

Zones

The non-wilderness portion of the D-E NCA was divided into 4 zones (1, 2, 3, and 5) for the purposes of facilitating conversation with the public about the diversity of landscape. Originally these zones were set up (along with the wilderness area as zone 4) in the pre-designation conversations in order to discuss unique areas within the proposed NCA. Zone 1 is the area between Highway 50 (NCA northern boundary) and the river corridor known as the “Hunting Grounds.” Zone 2 is the Gunnison River corridor. Zone 3 is the area between Highway 141 (NCA western boundary) and the western boundary of the WSA. This area is known as “Cactus Park” and is principally accessed from routes on the western edge of the NCA. Finally, Zone 5 comprises every other part of the NCA that isn’t already a part of another zone. This zone (5) focuses on Escalante Canyon, Sawmill Mesa, and the remote area between the Big and Little Dominguez Canyons on top of the mesa known as “Wagon Park.” These areas were grouped into the same zone due to similar access and use patterns (ranching, hunting, riding, etc.) in the eastern portion of the NCA. A decision was made to maintain continuity with the pre-designation process by maintaining the use of these zones in the current recreational surveys and focus groups so that comparisons could be made between the two points of public input (pre and post designation) in an effort to maximize the opportunity for public input.

The Dominguez Canyon Wilderness was established by Congress in the 2009 enabling legislation for the Dominguez Escalante National Conservation Area (D-E NCA). The legislation outlines the boundary for the Wilderness Area and places the landscape under the regulation of the 1964 Wilderness Act. Most, but not all, of the former WSA was established as Wilderness. The WSA had been known as Zone 4 in previous focus groups, but because of the very distinct requirements of Wilderness Management it was determined that there should be two separate focus group scripts (see Appendices 1 & 2) for Wilderness and non-wilderness landscapes within the D-E NCA. While the non-wilderness focus groups were to highlight recreation related questions to supplement the results of the recreation surveys also conducted by the Natural Resource and Land Policy Institute (NRLPI) at Mesa State College; the Wilderness focus groups needed to consider a broader perspective beyond recreation to address the unique challenges of wilderness management. Questions for both focus scripts were developed in collaboration with BLM staff.

Five zones were established in the Wilderness area to see if the different settings would have an impact on the way the public perceived wilderness values and management options in

those areas. Zones 1 and 2 are the highly trafficked portions of the Wilderness at either end of the Big Dominguez Canyon (Zone 1 is the three miles after the confluence with the Gunnison River to the popular petraglyph site known as “Newspaper Rock”; Zone 2 is the first few miles downstream from the BLM Dominguez campground, itself situated just beyond the Wilderness boundary). Zone 3 is the area between these two zones along the Big Dominguez Canyon as well as the Little Dominguez Canyon from the confluence to Poison Canyon and Lightning Basin. The zone acts as a transition zone between the two highly visited zones (1 and 2) and the most remote zone in the Wilderness (Zone 5 which encompasses the upper portion of Little Dominguez Canyon down to Poison Canyon). Zone 4 is the mesa area on the eastern half of the wilderness area from the eastern rim of Little Dominguez Canyon to the western rim of Escalante Canyon. This zone is primarily accessed from the east through Escalante Canyon and holds most of the grazing leases in the wilderness area. Some differences were noticed in the responses between these particular zones, but not as many as one might have expected. It seems that the public made more distinction between specific issues/actions in the wilderness than on specific landscapes in the wilderness.

Focus Group Demographics

A total of 117 participants signed in to at least one of the focus groups in this phase of the research. The largest focus group had 28 participants in Delta for zone 5. The smallest focus group had 10 participants in Delta for zone 2. Participants were encouraged to sign in (although when compared to participation in the i-clicker portion of the meeting about 10% in any given meeting chose not to sign in. Numbers reported reflect only those who signed in).

Table 1 Focus Group Participant Numbers

Location	Zone	Participants
Grand Junction	1	15
Delta	2	10
Grand Junction	3	24
Delta	5	28
Grand Junction	Wilderness (4)	27
Delta	Wilderness(4)	13
Total		117

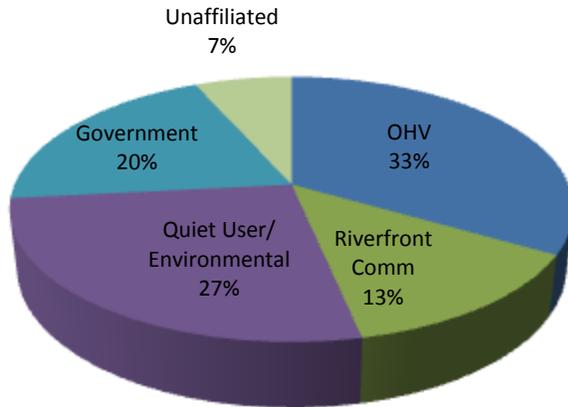
Zones by group affiliation

Participants were asked to provide their name, email address, phone number and “organizational” affiliation, if any. Based on the responses in the organizational affiliation

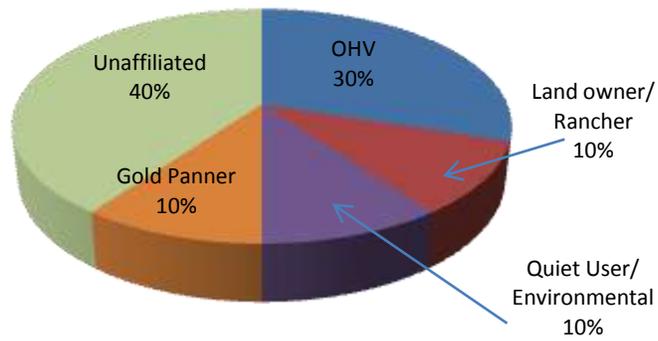
column in the sign-in sheets the following pie charts were created. Some meetings such as zones 1 and 2 and both wilderness meetings had a diverse representation of various stakeholders, while meetings on zones 3 and 5 had far less diversity of stakeholders. Although 75 percent of the participants in the zone 3 meeting identified themselves as members of an OHV organization (WSATVA, COVCHO, etc.), this zone is heavily used by OHVs and the group was underrepresented in the survey (see survey report discussion for possible reasons). Therefore it was important to hear from this critical stakeholder group. Likewise in the zone 5 meeting, which covers Escalante Canyon, one-third of the participants identified themselves as ranchers on the sign-in sheet and most of those self-identified as residents of Escalante Canyon. Given the under-sampling of this group in the survey intercept methodology (see discussion of the model in the survey report), the focus group offered valuable insight into the concerns of these key stakeholders and provided them with an opportunity to participate in the planning process in a way that they might have missed without the focus group.

The Grand Junction Wilderness meeting had a particularly diverse mix of individuals, and the second largest total of participants (27) in the study. Although OHVs are restricted from accessing wilderness, nearly a quarter (22 percent) of the participants in that wilderness meeting identified themselves as associated with an OHV organization. The Grand Junction Wilderness focus group had participation from county government, ranchers, and organized recreational groups representing a wide variety of activities (hiking, fishing, hunting and horseback riding). One quarter (26 percent) of the participants at the meeting did not offer an affiliation, which is the highest percentage of unaffiliated of any Grand Junction meeting. Two meetings in Delta had nearly 40 percent of the participants opting not to identify any affiliation, which might reflect a greater distrust of organizational identification consistent with research on rural communities in the inter-mountain West. This explanation was supported by many of the comments made at those meetings by the participants. The Grand Junction Wilderness meeting was also well-balanced demographically by a wide range of ages among the participants and far more gender balance than most of the other meetings -- including several members of the "Great Old Broads for Wilderness" organization. The specific percentage of group affiliation by participants of all meetings, is represented in the accompanying pie charts.

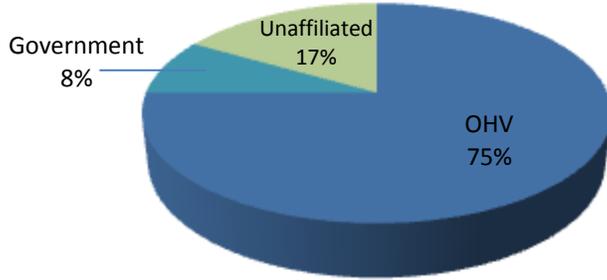
GJ Zone 1



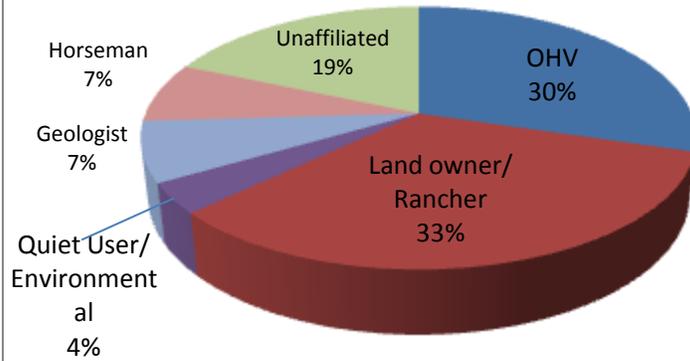
Delta Zone 2



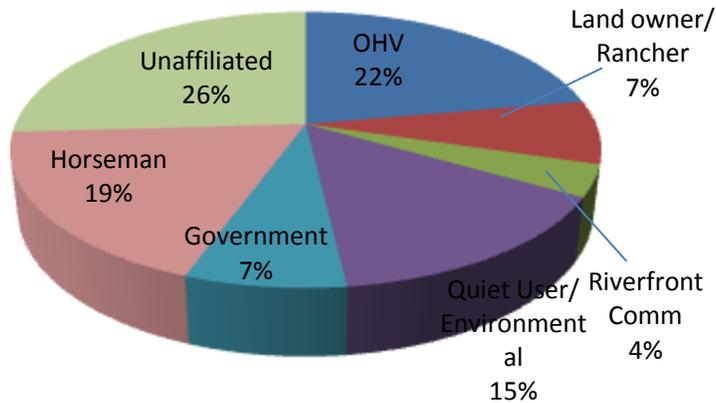
GJ Zone 3



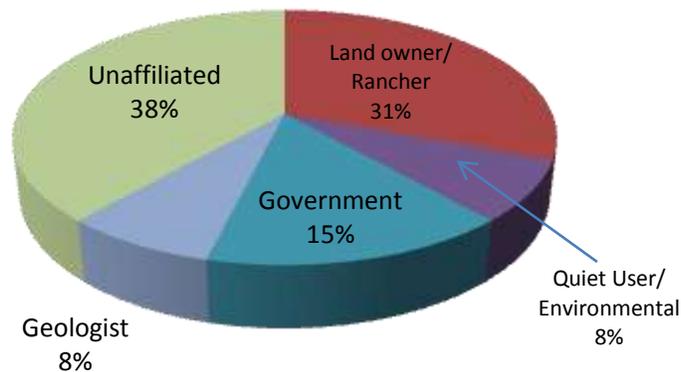
Delta Zone 5



GJ Wilderness



Delta Wilderness



Non-Wilderness Focus Groups

The attached scripts (Appendices 1 and 2) have complete wording and context of each question asked in the non-wilderness zone based recreational focus groups and the Wilderness Management focus groups in both locations. What follows is a brief discussion of why specific questions were asked in each the non-wilderness zone recreation focus groups.

In the non-wilderness focus groups (zones 1, 2, 3 and 5) the same questions were asked for each zone. Initially, the participants were given a list of issues that were raised for that zone

in earlier focus groups, conducted by the staff of NRLPI prior to NCA designation. This continuity was important for several reasons. It would be foolish to throw out those issues and start fresh when many of them would just be placed on the agenda again. The i-clicker question on the salience of the issue would be able to sort out issues that were no longer of concern for the zone. The participants, many of whom also participated in those earlier discussions, need to see that their efforts at identifying issues were honored and respected in the process.

After the issues were listed, participants were given the opportunity to add to the lists as many issues as they thought were faced in that particular zone. For a complete set of all issues raised in each zone as well as a record of comments made throughout the focus groups not captured in this report see the complete meeting notes of each meeting attached to this report as Appendix 4. Next, in an effort to facilitate deeper discussion on a few issues raised that were of the highest important to the participants there (an average of 10-20 issues were listed for each zone), and to hear from everyone in the room on every issue efficiently, i-clickers (audience polling technology) were used to anonymously poll the participants on the importance of each issue to the zone today. Three to four issues were identified in each zone as most important to a majority of participants as recorded through their i-clicker responses. After each issue, the results of the i-clicker responses were displayed as a bar graph for each value in a five-point scale. This display was used for follow-up discussion and transparency in the process.

For the purposes of this analysis, the mode and the median were selected as better measures of central tendency than the mean or average. Mode and median are most often used where the intervals between responses on a continuum have no measureable meaning. The difference between “most important” and “second most important” are purely subjective in the minds of the respondents; this means the mean or average sheds little light on the data. Selecting the mode, or most popular response (or responses), however, allows researchers to examine where populations have “loaded” their answers on a single response, like consensus, where they are divided between two responses, or where no consensus exists at all. The mode then allows BLM personnel to assess not only which values are most important but how broad the consensus on their importance is. The median is the response that falls in the exact middle of the sample when all responses have been arranged in order from largest to smallest. In a way similar to mode, the median gives a more accurate picture of the distribution of responses in each group and for each value. The scale used in the non-wilderness focus groups ran from A “not at all important” (coded 1) to E “most important” (coded 5) The null value on this scale, the equivalent of “I don’t know” or “I have no opinion,” fell at “B” and was coded as 2.

Table 2 Issues in Non-Wilderness Focus Groups

Issue	Zone	Mode	Median
Trails	1	5	5
New Routes	3	5	5
Rec. Opportunity	3	5	5
Road Closures	3	5	5

Community Connection Trail	1	5	4
Travel Management	5	5	4
Permits	2	5	3
Multiple Use	1	5/4	4.5
	5	5	5
Private Land/Property	1	4/3	3
	2	5/3	3
	5	5	4
Water Rts./Diversion	2	4	4
	5	4	4
Hunting	2	4	4
	3	4	3
	5	4	4
Scenic Views	1	4	3.5
Gates/Fences	3	4	3.5
	5	4	3.5
Stock/Wildlife Ponds	3	4	3.5
	5	4	3.5
Overuse	2	4	3
Law/Plan Enforcement	2	4/3	3
	3	3	3
	5	5	4
Camping/Fire/Grp. Use	3	4	4
	5	3	3
Grazing	1	2	2
	5	5	4

Litter/Vandalism/Partying	1	3	3
	3	3	3
	5	4	4
Restrictions	5	3	3.5
Trespassing	5	3	3.5
Spanish Trail	1	3	3
Commercial Outfitting	2	3	3
Consumptive Use (firewood/quarry)	3	3	3
Separate Use Grps.	3	3	3
Weekend/Weekday Use	3	3	3
Potholes	5	3	3
Streams and Riparian	5	3	3
Archeological Sites/Protect	1	2	2.5
	2	4	3
Rec. Prospecting	2	3	2
Fishing	5	3	2
Wildlife (corridors/buffers/habitat)	1	3	3
	2	4/3	3
	3	2	2
Access to wilderness	2	2	3.5
Search and Rescue	5	2	2.5
Fire Suppression	2	2	2
Vegetation/Plants	1	none	2.5
	5	none	3
Target/Undefined Shooting	1	3/2	3

	5	1	2
Railroad	1	1	2.5
Day Use Fees	2	1	2
Noxious Weeds	2	1	2

This table summarizes the mode and median for issues discussed in various zones. It, also, reflects the fact that some issues were important in more than one focus group. As such, it shows the degree of consensus both within and between zones. So, for example, zones 2, 3, and 5 agree that hunting is a “really important” (coded as 4) with the most participants responding in that way in their own groups and those groups sharing a common most popular response. This tells BLM planners that hunting is a value that is broadly shared (across three areas/groups) and that it is a “really important” issue to users of public lands in those areas. It is important to remember at this point that not all issues were raised in all focus groups. Some issues, like archeological sites, may only have been pertinent to zones that actually have significant archeological sites, in this case petroglyphs.

Table 2 also reveals the complexity of opinions within zones. For example, it is not enough to be able to say that grazing and cattle-related issues are important to the participants in the zone 5 focus groups. By examining the table, BLM planners can easily extract exactly what about grazing and cattle-related issues concerns public land users. From the table, multiple use, gates and fences, trespassing, stock ponds, etc. are all either “most important” (coded as 5) or “really important” (coded as 4) to the participants in zone 5. This might be expected from the fact that 33 percent of the participants in that group were ranchers, but the exact nature of their concerns—non-ranching users do not consider closing gates, recognize that they are trespassing on private property or are misusing stock ponds.

Community and Environmental Benefits

According to the theory of Benefits Based Management, there are three types of benefits that the BLM manages for when formulating recreational policy. These are:

- benefits to the individual;
- benefits to the community; and
- benefits to the environment.

An example of individual benefit from mountain biking might be exercise that makes the individual healthier. An example of community benefit from OHV riding could be the economic benefit of buying gas and supplies and staying in local hotels, etc. An example of an environmental benefit from hunting, would be the overall health of the heard by reducing the number of deer competing for winter grazing. When a recreational user engages in an activity on public land, benefits accrue in one or more of these areas. While one would hope that these benefits are positively enhances as a result of the activity, there is also the possibility of negative

outcomes as a result of individual participation in a particular activity in a given area. The participants were asked two questions to get at their perceptions of benefits in any category and negative outcomes as a result of certain activities in a particular zone. Since the recreational survey did a good job at identifying many individual benefits to particular activities, the participants were encouraged to consider the benefits to the community and the environment.

Table 3: Community and Environmental Benefits

Benefit	Zone
Enhances tourism	1
Historic Preservation – link to heritage	1,2
Education about public lands	1,2
Economic benefits – gear, lodging, restaurants, refueling, guiding	1,2,3,5
Get out of city – get refreshed	1
People come back happier/more productive	1,2
Get away from everyday life	1
Meet friends – develop social relationships	1,5
Creates a sense of ownership/stewardship for public lands	1,3
Community Development	1
Enhances civil society	1
Agriculture in area contributes millions \$ and food	2
Adds kids to school system	2
Rest and Relaxation	2
More eyes on ground to help law enforcement	2
Community policing	2

Family bonding time	3
Volunteers help build trails (save BLM \$)	3
Pick up trash while recreating	3,5
Hunting, Fishing, wood cutting - help manage wildlife and vegetation	3
Assist in search and rescue operations	5
Access all year round – way to be outdoors	5
Enhances quality of life for residents	5
Builds connection to land, they want to protect it	

The table above indicates the responses given to the question of benefits and the zone meetings that in which they were mentioned. Where the benefits were identified in more than one zone, each of the zones it was mentioned in is indicated. For example, the economic benefits to the local communities as a result of recreational activity in the NCA were mentioned in all zones. The educational and heritage theme so prominent in the partnership responses was also identified here as desirable especially in the zone 1 and 2 meetings. It is interesting to note that in zone 1 a number of responses indicated that recreation activity in the NCA enhances the community development and understanding of how to participate in the democratic process (civil society), as well as providing an opportunity to address such issues as the need for law enforcement (identified as an issue in every zone) because of the increase of “eyes on the ground”, neighborhood watch model of community policing. It was also suggested that a sense of ownership/responsibility/stewardship could be enhanced by participation in recreation activities in the NCA.

Partnerships suggested

Once the key issues (for that particular zone) were identified, participants were asked how the BLM and partners could address these issues. The results of this discussion generated a useful list of potential partnerships the BLM can pursue to maximize limited resources in the management of the NCA.

Table 4: Suggested Partnerships

Zone	Partner	Task/Notes
1	Riverfront Commission	Trail from GJ to Delta through Zone
1	County Governments	Law Enforcement, recreation prioritization

1	School Districts	Educational outings with students
1	Partners Program	Opportunities for youth work on BLM lands
1	Boy Scouts and Girl Scouts	Opportunities for youth work on BLM lands
All	Natural Resource Venturing	Connecting youth to landscape through adventure recreation
1	Local Chapter of Old Spanish Trail Association	Historic Trail Preservation
1	Mesa Land Trust	
1	WSATV	Trail Building, Cleanup days, Search and Rescue
1	Cabelas, Sportsman's Warehouse and others	Public information campaigns and in-kind donations of materials
2	Law Enforcement -County and State	Vandalism, trespassing and other enforcement issues
2	Local/adjacent landowners	Planning process, vandalism, trespass and other property issues, access
2	Railroad	access, safety
2	Volunteer groups	Take head counts of recreation groups in zone
2	Stakeholders advisory group	on-going consultation with BLM on issues as they arise

3	WSATV	Trail Building, Cleanup days, Search and Rescue
3	Ranchers	Gates, trespass issues
3	DOW	wildlife habitat management
5	County Stakeholder's Association	
5	USFS	Joint use land management issues because of proximity and shared watershed
5	Law Enforcement -County and State	Vandalism, trespassing, speeding on Escalante Canyon Road and other enforcement issues
5	County Governments	Law Enforcement, recreation prioritization
5	Property owners	planning process, vandalism, trespass and other property issues, access

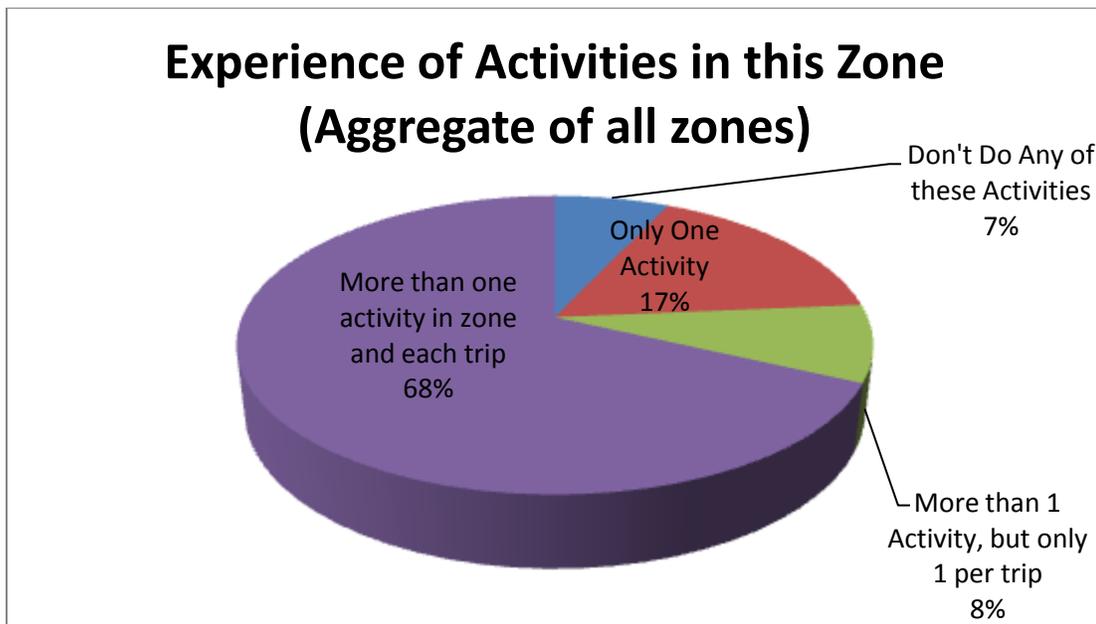
Several partnerships that were suggested draw from on-going relationships between the BLM and various organizations in other parts of Western Colorado such as the work done by COPMOBA on trail building; the efforts of WSATVA on search and rescue, trail building and cleanup days. Other partnerships mentioned highlight the need for the BLM to engage cooperating agencies such as the DOW on habitat management; the county government on law enforcement and recreation prioritization; and the USFS on joint management of watersheds. Local property owners adjacent to the NCA (from ranchers to railroads) are mentioned often as vital partners to address issues of access, safety and trespass/vandalism. Trails were listed as very important issues in several zones, and partnerships with local trails organizations such as the Riverfront Commission and the local chapter of the Old Spanish Trail to work on the trails (particularly in zone 1) were suggested as fruitful partnerships moving forward.

It is interesting to note how prevalent the suggestions of partnerships with youth organizations arose as a unique opportunity in the NCA as a whole and in zone 1 in particular. Participants seemed to strongly emphasize using the NCA as an opportunity to renew outreach and partnerships by the BLM involving education and engagement of the young in the management and enjoyment of public lands. Educational and interactive

partnerships suggested include the local school districts, the Partners program in Grand Junction, Boy Scouts and Girl Scouts, and Natural Resource Venturing. Finally, participants also indicated the value of developing partnerships with local service providers such as Summit Canyon Mountaineering, Cabelas, REI and Sportsman’s Warehouse to support volunteer projects through in-kind donations and public relations campaigns. Asking the simple question on possible partnerships to assist in addressing issues raised generated a tremendous list of opportunities for the BLM to pursue, but it also educated the public on their responsibilities to participate in the management of public lands. Through the discussion, participants gained from each other concrete examples of how they might develop partnerships with the BLM in the future.

Single use vs. Multi-Use

The participants were asked to list the activities that they engaged in while visiting that particular zone which was the focus of the meeting. The lists generated for each zone are contained in the meeting minutes (see Appendix 4) and don’t differ substantially from the activities identified in the surveys (see survey report). A follow-up question was asked regarding how many activities the participants engaged in within the zone on each visit. Much of the research on recreational activity on public lands accepts that the lands are multi-use, but generally treats the individual participants as single activity participants. One is either a hiker or a mountain biker or an OHV rider or a birder, etc. Although recreational management on BLM lands is supposed to be outcomes focused management, often management plans are written for activities. Surveys often assume that every response to questions about outcomes and setting characteristics refer to a single activity². The focus group question on multi-activity use tests the validity of the traditional planning assumption of single-activity recreation.



² Another way of addressing this gap between activities and outcomes is the development of niche bundles which is discussed at length and used in the analysis within the survey portion of the NRLPI report for the D-E NCA.

Every participant was able to record their response to the activity question through the use of i-clickers. It should be clear from the pie chart aggregating all zone data that the majority of users (68 percent) are multi-activity participants each trip to the NCA. An additional 8 percent of respondents engage in a variety of activities, but tend to participate only in a single activity on any particular visit to the NCA. Only 17 percent of the respondents indicated that they were only considering a single activity in a particular zone. Although these figures are aggregated across all zones, when disaggregated the percentages reported remain very similar for each individual zone. If recreational planning is based primarily on managing for specific activities in a particular location, these results suggest that it misses the most common approach to recreation by the public. These results seem to indicate that regarding recreation, the public not only supports the BLM's multi-use mandate for the landscape, but they also embrace that multi-use mandate as individual recreation users in their personal approach to the NCA.

Conclusions

Responses to issues, partnerships and benefits questions indicate that recreational activity can have a direct impact on the other thirteen management objectives identified in the enabling legislation for the NCA. These purposes include: scenic, geological, cultural, archeological, paleontological, historical educational and natural values, as well as scientific understanding, wilderness, wildlife, riparian habitat and water. If properly managed, recreational activity in the NCA can enhance these other management objectives and contribute to their preservation. However, there are certain potential negative outcomes such as trash, vandalism and habitat destruction also identified in the issue and negative outcomes questions in relation to recreational activity that must be addressed through an integrated resource management plan focused on the interrelationship between all fourteen identified management objectives. It is important not to plan for any one of these objectives without considering the interaction and impact on all others. These non-wilderness focus groups were designed to better understand not only recreational options, but the interaction between recreation and the other management objectives. The final two questions in the focus group asked the participants to identify how the interaction between management for other purposes beyond recreation (i.e. vegetation, visual resource management, public safety, etc.) impacts their desired outcomes while recreating, and how their recreating can impact those management objectives. The following table highlights the responses given to those questions and the zones in which those responses were given.

Wilderness Meetings

Wilderness Act and Wilderness Values

There are three principle documents that guide our conversation regarding wilderness management. The first was passed by Congress in 1964 entitled the Wilderness Act. This is the guiding document for all designated wilderness in the federal landscape. While it is a lengthy document with a wide variety of regulations and guidelines for how wilderness areas are to be managed, for our purposes here it is worth

noting that in Section 2 (c) it outlines several guiding values for wilderness management. It is worth quoting that section in its entirety as it defines what wilderness is and what its wilderness characteristics are.

“A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are *untrammelled* by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of *undeveloped* Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to *preserve its natural conditions* and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has *outstanding opportunities for solitude or a primitive and unconfined type of recreation*; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) *may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.*”

The second guiding legislation is the 2009 Omnibus Public Lands Management Act which specifically designated the Dominguez Escalante area as a National Conservation Area to be part of the *National Conservation Landscape System* and further designated the area we are discussing tonight as the Dominquez Canyons Wilderness Area to be managed according the 1964 Wilderness Act, with specific unique and supplemental characteristics to also be preserved. According to that act, several characteristics are unique to the NCA as a whole, although not necessarily the wilderness area specifically, they include such things as: ancient petroglyphs and dwellings, flower-strewn meadows, outstanding habitat for desert bighorn sheep, and scenic streams replete with waterfalls and plunge pools.

The final set of guiding documents are the various agency field manuals and RMPs. One interagency set of guidelines is called “Keeping it Wild: An Interagency Strategy to Monitor Trends in Wilderness Character Across the National Wilderness Preservation System” written in 2008, which, as the name suggests, is an interagency document trying to operationalize the values embodied in the Wilderness Act and develop management guidelines to preserve these values. These concepts were conveyed to the wilderness focus groups before questions were asked in order to give them a context and frame of reference in order to answer questions.

Script – Questions Asked

The wilderness meetings were centered around a series of hypothetical management situations that forced a tradeoff between two or more wilderness values. Often it is difficult to manage for both at the same time, so the BLM was interested in getting public input on these tradeoffs if that were the case. Complete questions and descriptions of all tradeoffs are located in the Wilderness script in Appendix 2. Complete responses to all questions asked in the Wilderness meetings for tradeoffs and zones are located in Appendix 3. Table 5 is derived from the complete data in Appendix 3. Of the questions asked when one value had the clear majority of responses strongly favoring it, then it was considered the dominant value for that trade off. The number in the table represents the number of times that value was a dominant value in the hypothetical tradeoffs. If no value had a clear super majority, but it still was significantly ahead of another value it was recorded as “split leans X” where X represents the dominant value. These splits indicate some disagreement within the group over which value should dominate in the tradeoff. If both values received roughly similar support, or the balanced option (C) was dominant, then that tradeoff was recorded as “True Split – no dominant.”

Table 5: Specific Tradeoff Dominant Values

Dominant Value	Delta Wilderness	Grand Junction Wilderness
Untrammeled (UT)	7	2
Primitive and Unrestricted Recreation (UR)	3	1
Natural (N)	1	2
Solitude (S)	3	1
Undeveloped (UD)	3	1
Unique and Supplemental Values (UV)	2*	6**
True Split – no dominant	3	2
Split – leans UT	0	1
Split – leans UR	1	1
Split – leans N	1	1
Split – leans S	0	2

Split – leans UD	1	1
Split – leans UV	0	2

*Archeological Sites

**Sheep and Archeological Sites

See Appendix 3 for complete responses on all values.

Analysis of this table and trends is still a work in progress and will be available in the next draft.

Zone Dominant Values

The wilderness area was divided into zones and the participants were asked within the zone to rank their preferences for particular wilderness values. This was designed to help planners have some idea of public desires for those areas if future tradeoffs arose that were not anticipated in the hypothetical tradeoffs discussed earlier. Once again, i-clickers were used and each value was assigned to a particular choice on the audience polling device. Each zone (described earlier in this report) was identified then participants were asked to choose their most important value for that zone, then their second most important value for that zone, then the least important value for that zone. The table below indicates the number of zones (5 total) in which a particular value was ranked as most important (second most or least) as the choice by more than a third of participants at that meeting. Thus, more than one dominant value could be selected for a zone if there was a relatively close split among the participants. Appendix 3 has the complete data of choices made for each value on each zone at each meeting.

Table 6: Value by Wilderness Zone

Value	Most Important		2 nd Most Important		Least Important	
	<i>Delta</i>	<i>GJ</i>	<i>Delta</i>	<i>GJ</i>	<i>Delta</i>	<i>GJ</i>
Untrammeled (UT)	3	0	3	0	3	1
Naturalness (N)	0	5	0	3	2	0
Undeveloped(UD)	0	0	0	3	0	0

Solitude or Unrestricted Recreation (S,UR)	5	0	4	0	0	4
Unique and Supplemental Values(UV)	0	1*	0	0	4	4

* Zone 1

Analysis of this table and trends is still a work in progress and will also be available in the next draft.

Differences between communities

One of the most interesting outcomes of this discussion of Wilderness values with groups from Grand Junction and Delta is the noticeable, often completely opposite, differences between the communities. There will be quite a bit of discussion of these differences and their implications for Wilderness Management in the final report, this too is a work in progress.

Appendix E: Non-Wilderness Focus Group Script

Focus Group Questions for Dominguez-Escalante NCA Recreation Planning
BLM GJFO RMP process
September 2010
Mesa State College

Introduction: {Introduction Slide with title information – institute, NCA title, zone number}

Good evening/afternoon, My name is Tim Casey, I am a professor of Political Science at Mesa State College and the field coordinator for The Natural Resource and Land Policy Institute at Mesa State. A few years ago we were asked by the county commissioners of Mesa, Delta and Montrose counties to assess the community support for the designation of a National Conservation Area (NCA) in the Dominquez –Escalante Management area between Grand Junction and Delta, Colorado. As a result of those discussions, and others, Congress acted to create the Dominguez-Escalante National Conservation Area under the management of the Bureau of Land Management. Part of the designation was a mandate for BLM to develop a management plan for the NCA with public input as an important component of that planning effort. Our meeting here tonight/today is part of that process. We have been asked by the Bureau of Land Management (BLM) to help them understand better how recreation fits into the community vision for this landscape. This is not the only way to gather information from the public, we have a number of issues that surfaced in our initial discussions two years ago, we have been surveying visitors on the landscape over the past year, and the BLM has a formal scoping process in which they will be accepting public comments until October 1. This focus group is designed to better understand some of the information we have already gathered by asking follow up questions, your participation in this focus group is a critical part of this planning process. I want to thank you for your willingness to spend some time with us to better understand the community's desires regarding recreation on BLM public Lands in the D-E NCA. Your participation in this focus group is entirely voluntary, and you are welcome to leave at any point, or simply choose not to answer a question if you don't want to. Your answers to these questions will remain anonymous, but the responses in this focus group will be part of the public administrative record of the NCA planning process. The entire focus group experience should take about an hour and a half or two hours at the most, and there are some snacks in the back that you are welcome to go and get at anytime. Are there any questions so far?

As part of the focus group process, we will be using the "i-clickers" that you were handed when you came in. Please turn your clicker units on at the top when we ask for you to record your input through the "i-clicker". You can do so by pressing the on/off button at the bottom of the clicker unit until the power light at the top of the unit stays on. When you push a letter choice (A-E) it will be recorded anonymously by the receiver unit plugged into my laptop. We can then display the results on the overhead to facilitate further discussion. You are free to change your selection until I close the voting, which I will announce before I do it. We will not be using the clickers on every question, but they are an effective tool for us to be able to assess the intensity of your concerns regarding issues that are raised. My assistant _____, is a student at Mesa State and I have asked him/her to join us today and take notes on your responses. Because your comments are important to us, we have also set up a microphone to record the conversation so that we can go back and make sure we didn't miss anything. Are there any questions over how we will proceed?

Geographic Orientation and Map discussion:

Okay, then let us begin,

{Slide 2: Zone map of the D-E NCA}

In order to facilitate the conversation the area in the D-E NCA has been divided into 5 regions that have related recreational opportunities. We will have a meeting on each area so that we can focus in more depth on the issues specifically in that zone.

Zone 1 is the Gunnison Bluffs or Hunting Grounds area which stretches from US Highway 50 to the bluffs above the Gunnison River on the north side. Zone 2 is the river corridor and riparian area along the Gunnison and the riparian corridor along Escalante Creek up to the potholes. Zone 3 is the area on the west side of the NCA from US Highway 141 to the edge of the Wilderness area and from the bluffs above the river on the south to Divide Road. Zone 4 is the designated Wilderness area itself in the NCA and there will be two meetings on this zone due to its unique management mandates embodied in the 1964 Wilderness Act. Finally zone 5 is the rest of the NCA which includes the area of Wagon Park and the eastern side of the NCA around Sawmill Mesa including Escalante Canyon. This meeting will focus on Zone _____. Realizing that there are shared issues across the landscape, please try to keep your comments related to this zone for this meeting, and you are welcome to attend other meetings on different zones to offer comments there as well.

Issues Raised at Past gatherings and their relative importance:

{Slide 3: Past Issues raised regarding recreation in the NCA – there will be a unique slide for each zone, show only the slide which corresponds to the zone of the meeting – see attachment for list of issues}

In our past discussions several issues were raised regarding recreation in this zone. On this slide we have a list of those issues. Please take a look at the list and let us know if we are missing some issues that we should talk about tonight. {Record those issues that are raised if they don't already fit into one of the issue categories listed}

Realizing we can't discuss each of these in depth in our limited time in this meeting, we would like you to give us a bit of feedback through the i-clickers so we can focus in on the issues that are the most important issues for this group. Then we will ask some follow up questions about those issues.

{Slide 4: Issue clicker slide – can write in the name of the issue at top, then clicker choices ranging from this is not at all important to me, to this is critically important to me – list each issue and have them rate it by clicker then display that in bar graph on screen so all can see results}

The following three (or four) issues _____, _____, _____, _____, seem to be the most important to the majority of this group, so we are going to ask the next set of questions about these issues.

Actions and Partnerships to address issue:

{Slide 5: room to write the issue on the top of the slide followed by the question: "What can we do to address this issue in the planning process for this zone? What partnerships can individuals, businesses, groups, communities, or government agencies form with the BLM to address this issue in this zone?" - responses will be recorded in blank space on the slide so all can see}

We are here to gather input about these issues that will help with the planning process for this zone, I will write the name of the top three (or four) issues one at a time on this slide {refer to Slide 5 now up} and then ask you to respond to the following question:

“What can we do to address this issue in the planning process for this zone? What partnerships can individuals, businesses, groups, communities, or government agencies form with the BLM to address this issue in this zone?”

Then I will record our responses by writing them down so we can project them on the wall for all to see.

{Repeat process for issue identified (no more than 4)}

Activities:

{Slide 6: List of Recreation Activities from past focus groups and surveys in the zone}

This slide is a list of the recreational activities that have been mentioned in association with this zone either in our discussions two years ago, or in the survey work done by our institute in the past year. Are there any recreational activities that are particularly suited to this zone that we have missed? {**dot down any additional recreation activities mentioned**} I will record those additional activities on this slide for all to see.

{ Slide 7: Multiple Use Measurement of activities – Text: Which of the following best describes your experience of these activities in this zone: “A=I don’t do any of these activities in this zone, B= I have done only one of these activities in this zone, C= I have engaged in more than one of these activities in this zone, but only one each trip, D= I have engaged in more than one of these activities in this zone, and engage in more than one activity each trip”}

We are going to use the clickers again on this next slide to determine the nature of your use or multiple use of this zone for recreation activities. Please select the choice from this slide that best represents your recreation in this zone. {**Discuss the results by displaying a bar graph of clicker results**}

Outcomes of Recreational Activity (Positive and Negative):

{Slide 8: Blank slide for recording responses – Writing at the top: “Naming a specific activity or set of activities in this zone, what is a benefit to the community or the environment of people engaging in this activity in this zone?” – record activity(s) and benefit mentioned on screen so all can see, then discuss set of responses to understand their interaction better.}

We have gathered a great deal of information about the personal benefits of engaging in these activities from past focus groups and the surveys. What we want to focus on is the benefits of people engaging in these activities IN THIS ZONE for the broader community or for the environment. For example, exercise in hiking or biking might lead to a healthier population and less sick leave from their place of employment. I will record your responses, so please identify a specific recreational activity or set of activities in this zone and then indicate a benefit.

{Slide 9: Negative outcomes – repeat conversation about positive benefits and record on blank slide, but write the following question at the top: “What are the negative outcomes that might accrue if people engage in a particular activity in this zone? Again try to focus on outcomes to the community and the environment/landscape.” - record activity(s) and benefit mentioned on screen so all can see, then discuss set of responses to understand their interaction better.}

Now we would like to know are the negative outcomes that might come about from particular recreation activities in this zone. In particular, we are interested in negative outcomes to the

community or the environment. Please indicate the activity or activities and the negative outcome you wish to avoid from that activity in this zone.

Interaction with other parts of the plan:

{Slide 10: Blank slide with the following question at the top: “Realizing that the BLM must manage the land for a variety of other issues beyond recreation (ie. Vegetation, resource development, public safety, etc), what could the BLM do in other policy issue areas that would positively or negatively affect your activities in the area of this zone you have identified as important to you?” – record answers on screen so all can see results}

At this point, we would like you to think about how the management of this land for uses beyond recreation such as vegetation management, grazing, wildlife habitat, archeological research, and visual resource management are likely to impact the recreational activities you feel are important in this zone.

{Slide 11: Blank slide with the following question at the top: “How is recreation activity in this zone likely to affect other parts of the land management plan, such as archeological sites, or grazing, etc.}

Finally, we need to consider how you think recreational activity in this zone is likely to have an impact on other parts of the plan such as vegetation, or archeology, or range management for example. I will once again record your responses here on the screen and we can discuss them.

Conclusions:

{Slide 12: Picture background slide with contact information at the bottom and the following question at the top: “Are there other issues/comments/suggestions concerning:

1. Public Lands
2. The land use planning process, or
3. This group discussion.” }

Thank you for your time and participation in our focus group. Your responses are vital to a successful NCA planning process that takes account of the hopes and concerns of the communities that are affected by public lands nearby. These responses will be compiled with the responses of other focus groups we are conducting in the area. We will report the results to the BLM who will incorporate those responses into their development of a management plan for the D-E NCA. We encourage you to stay active in the process throughout. Our report on this focus group and the other focus groups regarding the D-E NCA, as well as the survey data and analysis will all be available on the BLM’s Website for the Dominguez-Escalante NCA(which is linked to the GJFO and UFO websites). Thank you again for your time, have a good day.

Appendix F: Wilderness Focus Group Script

**Focus Group Questions for Dominguez-Escalante NCA Recreation planning
BLM GJFO RMP process
Wilderness focus Groups
October 2010
Mesa State College**

Introduction: {Introduction Slide with title information – institute, NCA title, zone number}

Good evening, My name is Tim Casey, I am a professor of Political Science at Mesa State College and the field coordinator for The Natural Resource and Land Policy Institute at Mesa State. A few years ago we were asked by the county commissioners of Mesa, Delta and Montrose counties to assess the community support for the designation of a National Conservation Area (NCA) in the Dominquez – Escalante Management area between Grand Junction and Delta, Colorado. As a result of those discussions, and others, Congress acted to create the Dominguez-Escalante National Conservation Area under the management of the Bureau of Land Management. Part of the designation was a mandate for BLM to develop a management plan for the NCA with public input as an important component of that planning effort. Our meeting here tonight is part of that process. We have been asked by the Bureau of Land Management (BLM) to help them understand better how recreation fits into the community vision for this landscape. This focus group is designed to better understand the public desires for achieving various and sometimes conflicting values of Wilderness embodied in the Wilderness Act of 1964 and the designating legislation of 2009 for the Dominquez Escalante National Conservation Area, your participation in this focus group is a critical part of this planning process.

I want to thank you for your willingness to spend some time with us to better understand the community's desires regarding the management of BLM public Lands in the D-E NCA, particularly in the Dominquez Canyons Wilderness Area. Your participation in this focus group is entirely voluntary, and you are welcome to leave at any point, or simply choose not to answer a question if you don't want to. Your answers to these questions will remain anonymous, but the responses in this focus group will be part of the public administrative record of the NCA planning process. The entire focus group experience should take about an hour and a half or two hours at the most, and there are some snacks in the back that you are welcome to go and get at anytime. Are there any questions so far?

As part of the focus group process, we will be using the “i-clickers” that you were handed when you came in. Please turn your clicker units on at the top when we ask for you to record your input through the “i-clicker”. You can do so by pressing the on/off button at the bottom of the clicker unit until the power light at the top of the unit stays on. When you push a letter choice (A-E) it will be recorded anonymously by the receiver unit plugged into my laptop. We can then display the results on the overhead to facilitate further discussion. You are free to change your selection until I close the voting, which I will announce before I do it. We will not be using the clickers on every question, but they are an effective tool for us to be able to assess the intensity of your concerns regarding issues that are raised. My assistant ASHLEY MATES AND MAUREEN MCCARNEY/ASHLEIGH HAJLOO, are students at Mesa State and I have asked them to join us today and take notes on your responses. Because your comments are important to us, we have also set up a microphone to record the conversation so that we can go back and make sure we didn’t miss anything. Are there any questions over how we will proceed?

Geographic Orientation and Map discussion:

Okay, then let us begin,

{Slide 2: Zone map of the D-E NCA}

In order to facilitate the conversation the area in the D-E NCA has been divided into 5 segments that have related recreational opportunities. We have had a meeting on each area so that we can focus in more depth on the issues specifically in that zone. These last two meetings were reserved for the Wilderness Area set aside by Congress in the designating legislation for the NCA.

Zone 1 is the Gunnison Bluffs or Hunting Grounds area which stretches from US Highway 50 to the bluffs above the Gunnison River on the north side. Zone 2 is the river corridor and riparian area along the Gunnison and the riparian corridor along Escalante Creek up to the potholes. Zone 3 is the area on the west side of the NCA from US Highway 141 to the edge of the Wilderness area and from the bluffs above the river on the south to Divide Road. Zone 4 is the designated Wilderness area itself in the NCA and there will be two meetings on this zone due to its unique management mandates embodied in the 1964 Wilderness Act. Finally zone 5 is the rest of the NCA which includes the area of Wagon Park and the eastern side of the NCA around Sawmill Mesa.

This meeting will focus on Zone 4, the Wilderness Area. Realizing that there are shared issues across the landscape, please try to keep your comments related to the Wilderness Area as it has been designated by Congress. Whether you think there should have been Wilderness designated in the area is not the question we can ask, because Congress has already decided there should be a Wilderness area here, the question is how to manage the landscape given that designation and the controlling legislation such as the 1964 Wilderness Act that govern the uses of the land.

{Slide 3: guiding legislation}

There are three principle documents that guide our conversation this evening. The first was passed by Congress in 1964 entitled the Wilderness Act. This is the guiding document for all designated Wilderness in the federal landscape. While it is a lengthy document with a wide variety of regulations and guidelines for how Wilderness Areas are to be managed, for our purposes here it is worth noting that in Section 2 (c) it outlines several guiding values for Wilderness management. It is worth quoting that section in its entirety as it defines what wilderness is and what its wilderness characteristics are.

“A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.”

The second guiding legislation is the 2009 Omnibus Public Lands Management Act which specifically designated the Dominguez Escalante area as a National Conservation Area to be part of the *National Conservation Landscape System* and further designated the area we are discussing tonight as the Dominguez Canyons Wilderness Area to be managed according the 1964 Wilderness Act, with specific Unique and Supplemental Characteristics to also be preserved. According to that act, several

characteristics are unique to the NCA as a whole, although not necessarily the Wilderness area specifically, they include such things as: ancient petroglyphs and dwellings, flower-strewn meadows, outstanding habitat for desert bighorn sheep, and scenic streams replete with waterfalls and plunge pools.

The final set of guiding documents are the various agency field manuals and RMPs one interagency set of guidelines is called “Keeping it Wild: An Interagency Strategy to Monitor Trends in Wilderness Character Across the National Wilderness Preservation System” written in 2008, which, as the name suggests, is an interagency document trying to operationalize the values embodied in the Wilderness Act and develop management guidelines to preserve these values.

{Slide 4: Wilderness Values}

On the hand out you have been given for reference, the 5 guiding values for wilderness in this area have been briefly described. These characteristics emerge out of the 1964 Wilderness Act Section 2 (c). They are Untrammeled, Natural conditions, undeveloped, outstanding opportunities for solitude and unconfined recreation, and other unique and supplemental values as outlined in the designating legislation. Let us look at the descriptions of each briefly.

1) **Untrammeled**: A “trammel” is literally a net, snare, hobble, or other device that impedes the free movement of an animal. Here, used metaphorically, “untrammeled” refers to wilderness as essentially unhindered and free from modern human control or manipulation.

2) **Natural**: Wilderness ecological and evolutionary systems are substantially free from the unintentional effects of modern civilization. It is “protected and managed so as to preserve its natural conditions.”

3) **Undeveloped**: Wilderness has minimal evidence of modern human occupation or modification. It is land “retaining its primeval character and influence,” “without permanent improvements or human habitation,” “with the imprint of man's work substantially unnoticeable,” and “where man himself is a visitor who does not remain.”

4) **Solitude or Primitive and Unconfined Recreation**: Wilderness provides opportunities for people to experience natural sights and sounds, solitude, freedom, risk, and the physical and emotional challenges of self-discovery and self-reliance. It “has outstanding opportunities for solitude or

a primitive and unconfined type of recreation” and “shall be administered...in such manner as will leave them unimpaired for future use and enjoyment as wilderness.”

5) ***Unique / Supplemental:*** Wilderness areas “may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.” Though these values are not required of any wilderness, where they are present they are part of that area’s wilderness character, and must be protected as rigorously as any of the four required qualities. These values may or may not overlap with the other four qualities. They are usually identified in the area’s designating legislation, legislative history, original wilderness inventory, wilderness management plan, or at some other time after designation.

While the “Keeping it Wild” management document suggests that none of these is to be valued over another, the reality is that these values often seem to be in conflict when making specific management decisions. The BLM staff of the D-E NCA believe these conflicts are an opportunity to get valuable public input on their preferences regarding these tradeoffs to help guide the management plan. This focus group is designed to get your input on these tradeoffs in this particular Wilderness area. The following questions will utilize the i-clicker technology to record your preferences to help them develop management alternatives for the Wilderness Area.

{Slide 5: Tradeoffs in Wilderness Characteristics/Values slide}

Although the Wilderness Act and other governing documents call for all of these Wilderness values and characteristics to be treated equally, it is sometimes difficult for these values to both be upheld when they come into conflict in a particular management situation. It is in these cases that it is perfectly appropriate for the managing agency to seek public input on which of the values/characteristics of Wilderness is preferred in the specific dilemma/tradeoff. The BLM staff has identified a whole series of management situations in which two or more Wilderness Characteristics seem to be in conflict in the Dominguez Canyons Wilderness, and they have asked us to gather some data from the public regarding what values they would prefer to emphasize when the values are in conflict. The next several slides will help us identify these for specific Wilderness management challenges.

{Slides 6-25: Specific Tradeoffs – each of these tradeoffs will offer a spectrum of choices with A=Strongly prefer value 1, B=Somewhat prefer value 1, C=don’t know, D= somewhat prefer value 2, E= strongly prefer value 2. Each slide will have a title of the value, the facilitator will offer a brief

description of the tradeoff, ask if there are any questions, then conduct a participant poll for that specific tradeoff. This will be repeated for all 17 tradeoffs described below. NOTE: Some tradeoffs contain tradeoffs between more than one value, in these cases each value tradeoff for the situation will be polled separately and have a different slide}

1. Removal of an old gate – untrammled v. undeveloped

A large metal gate was installed on an old route out to Triangle Mesa before the area was designated as a wilderness. Should BLM go in and remove this gate (trammeling the wilderness) to improve the undeveloped character of the wilderness?

2. Sheep capture – untrammled v. natural; natural v. solitude

The Division of Wildlife proposes to use a helicopter to dart, net, and study desert bighorn sheep. They will use the information gathered to develop a greater understanding of population regeneration, migration, and overall health. The helicopter would fly over the wilderness for approximately two days and would land between 5 and 10 times for approximately ½ hour each time. This project would trammel the wilderness and reduce the naturalness of the area with tags and collars on bighorn sheep. Opportunities for solitude would also be affected by helicopter over-flights. Should BLM permit this project within the wilderness?

3. Habitat treatment – natural v. untrammled

The Division of Wildlife proposes to use heavy motorized equipment (hydro-axe, bulldozer, etc.) to treat approximately 500 acres of pinyon-juniper to remove up to 50% of the existing vegetation on the mesa above one of the canyons. Doing this would open up the area to increased travel by desert bighorn sheep ewes and lambs. DOW believes this would increase the herd population and health, but it would trammel the wilderness. The effects of the treatment would be apparent for many years and the natural ground cover would be altered but conditions would improve for a key native species. Should BLM permit a treatment like this within the wilderness?

4. Limit use to preserve solitude – unconfined v. solitude

BLM must manage a wilderness area to provide outstanding opportunities for solitude OR a primitive and unconfined type of recreation. These two are frequently in contrast to each other. Solitude is eliminated when too many people are in too small of an area. BLM could limit use of an area to preserve and enhance the opportunity for solitude, but this would reduce one's ability to enjoy an

unconfined type of recreation. Would you support a limited use permit system even if it meant you might not be able to visit the wilderness any time you wanted to?

5. Existing trails – natural v. undeveloped; supplemental values v. undeveloped

There are several miles of existing routes within the Dominguez Canyon Wilderness. Should these routes be adopted into a designated trail system? Adoption of these routes would improve access to the wilderness but would reduce the ability to experience an unconfined type of recreation. These trails could be rehabilitated and restored to a more natural condition.

6. Trail construction – supplemental values v. unconfined recreation and undeveloped character

Building new trails may make it easier to access the resources identified in the designating legislation but would reduce the ability to enjoy a primitive and unconfined type of recreation while also reducing the undeveloped nature of the area. Should new trails be built to improve access to the Dominguez Canyon Wilderness?

7. Tamarisk treatment (hand) – untrammelled v. natural

The Tamarisk Coalition proposes to remove all of the tamarisk in Big Dominguez Canyon. They would use hand tools to cut the tamarisk and herbicide to spray the stumps to reduce the potential for regrowth. Tamarisk would be piled for prescribed burning over the winter. Should BLM allow the Tamarisk Coalition to manually cut, chemically treat, and stack tamarisk for burning. It would trammel the wilderness but in the long run would make the area more natural.

8. Tamarisk treatment (motorized/mechanized) – untrammelled v. natural

The Tamarisk Coalition proposes to remove all of the tamarisk in Big Dominguez Canyon. They would use chainsaws to cut the tamarisk and herbicide to spray the stumps to reduce the potential for regrowth. Tamarisk would be piled for prescribed burning over the winter. Should BLM allow the Tamarisk Coalition to use chainsaws to cut tamarisk, chemically treat stumps and stack the cut trees for burning. It would trammel the wilderness but in the long run would make the area more natural.

9. Group size limits – opportunities for solitude v. unconfined recreation

Most wilderness areas have a group size limit of 12 people. These limits are in place to help preserve the feeling of solitude in an area while also reducing the physical impacts associated with larger

groups. Group size limits can be higher, or lower, however, and can even vary in different areas of the wilderness. A group size limit of 12 helps to preserve solitude and reduce physical impacts, but a limit of 6 or 8 would be even more effective. Conversely, a group size limit greater than 12 would allow larger groups to enjoy the resources of the wilderness, and physical impacts could be limited if well-designed and constructed trails are available.

10. Signs inside wilderness boundary – undeveloped v. primitive recreation

Wilderness areas should have only the minimum level of signs necessary to provide for visitor safety and resource protection. However, this level can vary not only from wilderness to wilderness but within different areas of the same wilderness. Signs can help visitors orient themselves and navigate through the wilderness and can also be used to protect resources by informing visitors. What level of signing should BLM use within the wilderness? Should the level of signing vary from zone to zone?

11. Constructing facilities to protect cultural sites – undeveloped v. untrammeled; supplemental values v. undeveloped; supplemental values v. unconfined recreation

Cultural resources are identified by the designating legislation as one of the reasons for the establishment of D-E NCA and the DCW. If necessary, should BLM construct minor facilities such as a fence to keep visitors from being able to touch a Native American petroglyph?

12. Interpretive signs within the wilderness – supplemental values v. undeveloped

Wilderness is essentially without permanent structures such as interpretive signs. However, there are significant cultural resources within Dominguez Canyon Wilderness that visitors enjoy. Their experience may be enhanced with information about the resources they are enjoying, and these resources may be better protected if people know how to treat them. Should BLM construct information signs near a petroglyph panel to help people understand what they are looking at and how they can help protect it?

13. Paleo research and excavation – supplemental values v. untrammeled and undeveloped; solitude vs. supplemental values

A museum proposes to excavate a newly discovered dinosaur fossil from within the Dominguez Canyon Wilderness. This excavation would require light motorized equipment using existing routes and would last for several days. Excavation would enhance scientific understanding of the area but

would negative affect natural and untrammeled quality of the wilderness. Should BLM permit scientific excavation of a dinosaur fossil from the wilderness?

14. Fire restoration – untrammeled and undeveloped v. natural

If a human-caused fire broke out in the wilderness and burned 140 acres of sage and pinyon-juniper, should BLM go in after the fire is out and attempt to reseed and restore the area to its condition before the fire? This would trammel the wilderness but would also improve the naturalness of the area in the long term.

15. Trail restoration – untrammeled v. undeveloped and natural

Several existing two-track routes existing within the wilderness. These routes are no longer open to motorized travel and are no longer necessary in their current form. Some visitors enjoy hiking on two-track routes because they can hike next to their companion and talk to each other while they walk. The area's naturalness would increase if these two-tracks were rehabbed into singletrack hiking trails, but to do so would impact the untrammeled character of the wilderness. Should BLM rehab existing two-track routes into singletrack trails?

16. Recreation participation survey – solitude and unconfined recreation

Visitors to wilderness should have the chance to 'get away from it all'. The Wilderness Act seeks to preserve this opportunity by requiring BLM to provide an outstanding opportunity for solitude. However, one of the ways BLM knows if they are achieving their management goals is by talking to the public, frequently through a 3rd party such as Mesa State College. Getting an accurate understanding for what wilderness visitors think is best done by contacting them while they are recreating. Should BLM or an educational institution be permitted to contact visitors while they are recreating in the wilderness? (this doesn't include wilderness ranger contacts to protect resources or visitor health and safety)

{Slide 26: Zone Map of the Wilderness Area}

The map you now see is of the Wilderness Area itself. It has been divided into management zones for the purposes of this conversation and because there might be different characteristics that you might wish to see emphasized in different parts of the Wilderness Area. While many of the tradeoffs we discussed could happen in any of these zones, there may be characteristics of a particular zone that you feel is the most unique quality of that zone. These zones are:

Zone 1: The lower part of Dominguez Canyon from the boundary near the confluence with the Gunnison River up into Big Dominguez Canyon to the confluence of the Dry Fork drainage and Big Dominguez Creek. This zone only includes that part of the Little Dominguez drainage around the confluence of Big and Little Dominguez Creeks.

Zone 2: The upper part of Dominguez Canyon from the boundary near the Dominguez Campground downstream approximately one mile.

Zone 3: This zone includes all the area within the Big Dominguez Canyon and the lower part of Little Dominguez Creek once it joins Big Dominguez Canyon beyond Poison Canyon and Lightning Basin.

Zone 4: This is the mesa area on the east side of the Wilderness from the eastern top edge of Little Dominguez Canyon to the Western edge of Escalante Canyon at the Wilderness Boundary.

Zone 5: This is the upper part of Little Dominguez Canyon down to Lightning Basin and Poison Canyon beyond the flat iron.

You have a copy of this map on the back of the handout we have given you, so you can reference it in the rest of our conversation this evening.

{Slide 27: Zone Characteristic– Top line : “Zone: _____ Characteristic: _____ important.” Assistant will write zone number in, then a series of statements in Characteristic line each corresponding to an i-clicker poll of the participants. There will be a separate poll for the top two levels in each zone, and one for the least important characteristic of the zone. The Characteristic order is: most important, second most, and least important. The choices for the clickers will be displayed below as follows: A=untrammeled, B=Natural, C=Undeveloped, D=Solitude or Primitive and Unconfined Recreation, E=Unique and Supplemental Values. This series of 3 questions will be repeated for all zones, gathering a poll on each}

We will begin by looking at these zones, recognizing that you may believe some wilderness values are more characteristic than others in a particular zone. My assistant will write the zone number at the top and a characteristic order starting with most important (for that zone), then second most important, finally the least important.

We will ask you to click in on a value that fits that level of characteristic and will repeat these questions for all zones. Here are your choices: A=untrammeled, B=Natural, C=Undeveloped, D=Solitude or Primitive and Unconfined Recreation, E=Unique and Supplemental Values. While we recognize all of these may be important to you, and are important to the legislation, this series of polls will help the BLM determine what you think are the most important values as tradeoffs between

these values might emerge in their development of a management plan for the zone. These preferences might be different for you across different zones in the Wilderness, so we will ask this same series of questions for each Wilderness zone. **{Note: because Solitude and Unconfined Recreation can often be caught in a tradeoff, if more than 30% of the participants choose that option, we will ask follow up questions to clarify their intent}**

{Slide 28: Additional Comments?- Picture background slide with contact information at the bottom and the following question at the top: "Are there other issues/comments/suggestions concerning:}

Thank you for your time and participation in our focus group. Your responses are vital to a successful NCA planning process that takes account of the hopes and concerns of the communities that are affected by public lands nearby. These responses will be compiled with the responses of other focus groups we are conducting in the area. We will report the results to the BLM who will incorporate those responses into their development of a management plan for the D-E NCA. We encourage you to stay active in the process throughout. Our report on this focus group and the other focus groups regarding the D-E NCA, as well as the survey data and analysis will all be available on the BLM's Website for the Dominguez-Escalante NCA(which is linked to the GJFO and UFO websites). Thank you again for your time, have a good day.

Appendix G: Complete Wilderness Tradeoff Responses

Meeting Location	Topic	Response A		Response B		Response C		Response D		Response E	
		Delta	Grand Junction	Delta	Grand Junction	Delta	Grand Junction	Delta	Grand Junction	Delta	Grand Junction
Question 1	Gate UT vs UD	5	5	1	6	1	3	1	5	1	6
Question 2	Limited use S vs UR	3	3	0	9	0	0	2	5	6	9
Question 3	Bighorn Sheep UT, N vs UV	6	2	2	3	0	0	1	7	2	15
Question 4	Bighorn Sheep S vs UV	7	1	0	2	0	0	2	6	1	17
Question 5	Habitat Treatment UT vs UV	8	7	0	3	1	1	0	6	3	9
Question 6	Existing Trails UV vs UR	5	11	0	6	0	1	2	2	5	5
Question 7	Existing Trails UT vs N	9	17	1	6	0	0	0	0	2	3
Question 8	Construction trails UV vs UD, UR	1	4	0	3	0	1	1	4	11	7
Question 9	Tamarisk hand tools UT vs N	5	4	1	2	0	0	2	4	4	13
Question 10	Tamarisk chain saw UT vs N	6	8	0	1	0	0	1	3	5	11
Question 11	Group Size S UT vs UR	5	11	0	4	1	2	1	0	6	6
Question 12	Construction facilities minor UV vs UD	7	10	1	5	0	0	0	3	4	5
Question 13	Construction facilities major UV vs UD	3	11	0	3	0	2	1	2	7	4
Question 14	Construction facilities minor UV vs P, UD	4	13	0	0	0	0	0	0	1	8
Question 15	Interpretive signs w/in UV vs UD	5	4	0	2	0	2	1	2	7	14
Question 16	Interpretive signs @ trailhead UV vs UD	7	11	2	5	0	2	1	0	2	4
Question 17	Paleo Research UV vs UT	0	6	0	3	0	1	1	5	12	9
Question 18	Paleo Research UV vs S	0	5	0	6	0	0	1	4	13	9
Question 19	Fire Restoration human made UT vs N	5	4	0	1	0	1	3	4	6	14
Question 20	Trail Restoration UT vs UD	9	9	1	2	0	1	0	4	4	7
Question 21	Recreation Participation Survey w/in S vs P	9	7	2	5	0	5	0	2	3	6
Question 27	Stock Ponds for Grazing	1	0	0	0	0	0	1	1	10	
Question 38	Fire Restoration Natural Cause UT vs N	4	0	1	1	0	0	2	2	6	
Question 39	Recreation Participation Survey @boundary S vs P	5	0	2	0	0	0	1	5	5	
	Preferred Value	Untrammeled (UT) Delta	Untrammeled (UT) Grand Junction	Natural (N) Delta	Natural (N) Grand Junction	Undeveloped (UD) Delta	Undeveloped (UD) Grand Junction	Softside/Unconfined Recreation (S/UR) Delta	Softside/Unconfined Recreation (S/UR) Grand Junction	Unique Values (UV) Delta	Unique Values (UV) Grand Junction
Question 22	Zone 1 Most	2	0	1	7	1	3	5	0	3	12
Question 23	Zone 1 2nd	3	2	1	11	1	4	5	1	3	3
Question 24	Zone 1 least	5	8	1	0	2	2	0	12	4	0
Question 25	Zone 2 Most	1	0	2	11	2	6	6	1	1	1
Question 26	Zone 2 2nd	2	1	1	4	1	11	7	2	2	2
Question 27	Zone 2 least	7	4	0	0	0	2	2	7	4	6
Question 28	Zone 3 Most	3	3	1	8	1	2	4	4	2	1
Question 29	Zone 3 2nd	5	2	0	6	1	9	4	4	1	0
Question 30	Zone 3 least	1	5	3	0	2	0	1	7	4	6
Question 31	Zone 4 Most	4	0	1	15	0	1	5	3	0	1
Question 32	Zone 4 2nd	6	1	1	1	1	14	4	3	1	2
Question 33	Zone 4 least	3	8	3	0	1	0	1	4	4	7
Question 34	Zone 5 Most	6	0	1	14	0	0	4	4	2	0
Question 35	Zone 5 2nd	9	1	1	2	1	14	3	3	0	0
Question 36	Zone 5 least	1	4	0	0	2	0	1	7	8	6

Appendix H: Planning for Priority Species and Vegetation (PPSV)

PPSV is a process used to organize biological data and analyses to support decision-making during resource management planning. It was developed as part of a working agreement between the BLM and the Nature Conservancy. PPSV is accompanied by an interactive Excel workbook that displays analyses of the alternatives and houses key information to support RMP documentation.

The following are benefits to the use of PPSV for biological resource planning:

- Supports and substantiates RMP planning decisions in a systematic, logical, and stepwise manner
- Integrates a strong science basis for RMPs
- Improves conservation approaches for species and vegetation
- Supports compliance with BLM Planning Handbook H-1610-1 and Appendix C
- Enhances interdisciplinary team collaboration and understanding
- Facilitates the design and adjustment of alternatives and cumulative impact analysis
- Provides framework for monitoring plans and tracking of implementation actions
- Facilitates on-the-ground project design and prioritization
- Provides greater clarity and rigor for public, legal, other reviews

The first step in the use of this tool is to identify species and vegetative communities that are priorities for planning. Then, a list of attributes and indicators for assessing the health of these species or vegetative communities are identified. For example, one way to assess the health of the sagebrush shrublands vegetative community is the relative cover of invasive species (defined as the percentage of understory plants that are invasive). Areas that have a high relative cover of invasive species are not healthy for this indicator.

Once attributes and indicators have been identified, data and specialist knowledge are used to determine the current condition for each attribute/indicator, which can be scaled up to determine the current condition of an entire species or vegetative type. Data and specialist knowledge can also be used to predict the future condition of each attribute/indicator, which can be incorporated into RMP alternative development and impact analysis.

For the purposes of the D-E NCA, biological specialists from the BLM, Colorado Division of Wildlife, the Nature Conservancy, Colorado Natural Heritage Program, US Forest Service and US Fish and Wildlife Service met in the fall of 2010. Over two days, a list of priority species and vegetation was assembled. From this list, indicators for evaluating the condition of these species and vegetation were identified. Over the subsequent months, BLM staff assembled the data needed to evaluate the current condition of each indicator for each priority species and vegetation. The results of this data collection are included throughout Section 2.4 of this document.

The following are the priority species and vegetation identified for the D-E NCA:

- Sagebrush shrublands
- Piñon-juniper woodlands
- Seeps
- Mountain shrub
- Riparian/wetlands

- Desert shrub/saltbush
- Ponderosa pine
- Colorado hookless cactus (*Sclerocactus glaucus*)
- Desert bighorn sheep
- Gunnison River aquatics
- Tributary aquatics
- Bats
- Cliffs and canyons